

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

**ORDER NO. R2 2003-0010
NPDES PERMIT NO. CA0038130**

WASTE DISCHARGE REQUIREMENTS FOR:

**CITIES OF SOUTH SAN FRANCISCO AND SAN BRUNO
WATER QUALITY CONTROL PLANT
NORTH BAYSIDE SYSTEM UNIT
SAN MATEO COUNTY**

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**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

**ORDER NO. R2-2003-0010
NPDES PERMIT NO. CA0038130**

**REISSUING WASTE DISCHARGE REQUIREMENTS FOR:
CITIES OF SOUTH SAN FRANCISCO AND SAN BRUNO
WATER QUALITY CONTROL PLANT
NORTH BAYSIDE SYSTEM UNIT
SAN MATEO COUNTY**

FINDINGS

The California Regional Water Quality Control Board, San Francisco Bay Region, hereinafter called the Board, finds that:

1. ***Discharger and Permit Application.*** The Cities of South San Francisco and San Bruno (hereinafter called the Discharger), which operate the South San Francisco and San Bruno Water Quality Control Plant (hereinafter called the WQCP), have applied to the Board for reissuance of waste discharge requirements and a permit to discharge treated wastewater to waters of the State and the United States under the National Pollutant Discharge Elimination System (NPDES).

Facility Description

2. ***Facility Location, Service Area, and Capacity.*** The Discharger owns and operates the South San Francisco and San Bruno WQCP, located in South San Francisco, San Mateo County. The current facility has an average dry weather flow capacity to provide secondary level treatment for 13.0 million gallons per day (mgd) of domestic, commercial, and industrial wastewater from the cities of South San Francisco and San Bruno, portions of the City of Daly City, and the Town of Colma. The WQCP can handle a peak hourly wet weather flow of 62 mgd. In 2001, the average annual and peak wet weather flows at the treatment plant were 10.4 and 24.4 mgd, respectively.
3. ***Discharge Location – Lower Bay.*** The Discharger is a member of the North Bayside System Unit (NBSU), which is the joint powers authority responsible for operation of certain shared transport, treatment, and disposal facilities. The NBSU includes the Cities of Millbrae, Burlingame, South San Francisco and San Bruno, and San Francisco International Airport (both the Airport's Industrial Wastewater Treatment Plant and Water Quality Control Plant). The treated wastewater from the WQCP is combined with the effluent from the other cities and flows by pipeline to the NBSU. The NBSU discharges into Lower Bay, a water of the State and the United States, northeast of Point San Bruno through a submerged diffuser about 5,300 feet offshore at a depth of 20 feet below mean lower low water (37 deg., 39 min., 55 sec. N latitude and 122 deg., 21 min., 41 sec. W longitude). The discharge achieves a receiving water to effluent initial dilution of a minimum of 10:1 at all times, and is classified by the Board as a deepwater discharge.
4. Waste Discharge Requirements Order No. 97-086, adopted by the Board on June 16, 1997, as amended by Order No. 98-117, adopted on December 12, 1998, previously governed the discharge from the WQCP.

5. The U.S. Environmental Protection Agency (USEPA) and the Board have classified this discharge as a major discharge.

Treatment Process Description

6. **Treatment Process.** The treatment facility consists of bar screens, grit chambers, primary sedimentation, aeration tanks, final clarifiers and disinfection equipment. The Discharger dechlorinates the combined NBSU effluent prior to discharging via the joint NBSU outfall off Point San Bruno.
7. **Solids Treatment, Handling and Disposal.** Sludge is thickened, anaerobically digested, and then dewatered. Final disposal of sludge is by trucking to a landfill for disposal.

Wet Weather Overflows

8. The WQCP was originally built in the early 1950s and the last upgrade was in 2001. The previous permit contained a maximum dry weather flow prohibition of 13 million gallons per day (mgd). Subsequent to the issuance of the previous permit, the Discharger performed a plant reliability study which determined that the WQCP at that time had a dry weather design flow of 9 mgd. In accordance with Cease & Desist Order No. 97-104, the WQCP has been upgraded to improve treatment reliability and increase capacity to handle future growth. These improvements have resulted in the WQCP having a dry weather flow capacity of 13 mgd, and a peak hourly wet weather flow of 62 mgd. This permit contains the same dry weather flow prohibition of 13 mgd, therefore is no need to increase flow capacity allowance.
9. During the rainy season, the WQCP receives high flows from groundwater infiltration and stormwater inflow (I/I). The effects of I/I, high loads, and occasional load spikes by industries are exaggerated by major deficiencies in the treatment facilities, such as insufficient capacity of the sewer collection system to handle peak flows. During heavy storms, untreated, stormwater diluted sewage may overflow at various locations in the collection system and eventually drain to Colma Creek via the storm drainage system. Several discharge violations, including effluent limit and discharge prohibition violations have occurred each year since 1993.
10. The existing outfall force main and effluent pump station at the WQCP have a hydraulic capacity of about 47 mgd and a maximum capacity of about 62 mgd. During heavy rains, effluent flow rates from the WQCP exceed the outfall and effluent pump capacities and treated effluent may discharge into Colma Creek, which flows into San Francisco Bay. From October 2000 to January 2002, there have been 10 near-shore overflows of effluent resulting in spills totaling over 2.2 million gallons into Colma Creek. Please see the detailed table outlining these overflows in the Fact Sheet as Attachment 10.
11. On August 20, 1997, the Board adopted Cease and Desist Order (CDO) No. 97-104, requiring the Discharger to cease and desist from discharging waste contrary to the requirements of NPDES Permit, Order No. 97-086. The basis of this CDO, was the insufficient capacities of the existing collection, treatment, and outfall systems, evidenced particularly during wet weather conditions of high stormwater inflow and/or high groundwater infiltration rates. The CDO set forth a provision and a time schedule to eliminate the prohibited discharges and violations of effluent limits. Provisions included improvements to the WQCP, improvements to the collection system, and an

effluent disposal study. In general, the Discharger is on track with the CDO requirements. The Discharger's compliance status with each of these requirements is included in the Fact Sheet as Attachment 11.

The requirements of the CDO pertaining to the Water Quality Control Plant Improvement Program have been met in 2002 with the completion of a three-year construction project. Completed construction has improved treatment plant reliability, replaced aging equipment, and provided additional capacity to handle flow increases attributable to development in South San Francisco and San Bruno and attributable to increased wet weather flows.

WQCP improvements have increased the facility's dry weather treatment capacity from 9 mgd to 13 mgd, and its wet weather treatment capacity from 35 mgd to 62 mgd. During wet weather, all peak flows up to 30 mgd receive secondary treatment. Peak flows over 30 mgd receive primary treatment and disinfection, and are then blended with disinfected secondary effluent. Blended effluent is dechlorinated and pumped to the NBSU outfall. Specific, major improvements to the treatment process are summarized in the Fact Sheet.

The Infiltration and Inflow Study was submitted by the Discharger in October 1999. The study recommended several improvements needed to mitigate overflows caused by a 5-year design storm. These improvements include the construction of additional pump stations, and force and trunk mainline structures. These wet weather improvements to the collection system are anticipated to be completed at the latest by June 2007, five months ahead of the CDO schedule.

The Discharger submitted a Draft Effluent Disposal Study in January 2002, as required by the CDO. The report recommends construction of an effluent storage pond to address the wet weather related problems at the WQCP documented above. Construction of the effluent storage pond is anticipated to be completed by December 2004.

Regional Monitoring Program

12. On April 15, 1992, the Board adopted Resolution No. 92-043 directing the Executive Officer to implement the Regional Monitoring Program (RMP) for San Francisco Bay. Subsequent to a public hearing and various meetings, Board staff requested major permit holders in this region, under authority of Section 13267 of California Water Code, to report on the water quality of the estuary. These permit holders, including the Discharger, responded to this request by participating in a collaborative effort, through the San Francisco Estuary Institute (formerly the Aquatic Habitat Institute). This effort has come to be known as the San Francisco Bay Regional Monitoring Program for Trace Substances. The Discharger has agreed to continue to participate in the RMP, which involves collection of data on toxicity and pollutants in water, sediment and biota of the estuary. Annual reports from the RMP are referenced elsewhere in this Order.

Applicable Plans, Policies and Regulations

Basin Plan

13. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board (SWRCB) and the Office of Administrative Law on July 20, 1995 and

November 13, 1995, respectively. A summary of its regulatory provisions is contained in Section 3912 of Title 23 of the California Code of Regulations. The Basin Plan identifies beneficial uses and water quality objectives (WQOs) for waters of the state in the Region, including surface waters and groundwaters. The Basin Plan also identifies discharge prohibitions intended to protect beneficial uses. This Order implements the plans, policies and provisions of the Board's Basin Plan.

Beneficial Uses

14. Beneficial uses for the Lower Bay receiving water, as identified in the Basin Plan and based on known uses of the receiving waters in the vicinity of the discharge, are:
 - a. Industrial Service Supply
 - b. Industrial Process Supply
 - c. Navigation
 - d. Water Contact Recreation
 - e. Non-contact Water Recreation
 - f. Ocean Commercial and Sport Fishing
 - g. Wildlife Habitat
 - h. Preservation of Rare and Endangered Species
 - i. Fish Migration
 - j. Fish Spawning
 - k. Shellfish Harvesting
 - l. Estuarine Habitat

State Implementation Plan (SIP)

15. The SWRCB adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (also known as the State Implementation Plan or SIP) on March 2, 2000, and the Office of Administrative Law (OAL) approved the SIP on April 28, 2000. By letter dated May 1, 2001, USEPA approved "those portions of the Policy that are subject to USEPA's water quality standard approval authority under section 303(c) of the CWA." The letter indicated that USEPA would comment on NPDES permit-related provisions separately. The letter also indicated that the longer TMDL-related compliance schedule provisions continue to be under USEPA review. USEPA approved Sections 1.1, 1.4.2 (mixing zones and dilution credits), 2 (through 2.2.1) (compliance schedules, except as noted above), 5.2 (site-specific objectives), 5.3 (exceptions), and Appendices 1 and 3. The SIP applies to discharges of toxic pollutants in the inland surface waters, enclosed bays and estuaries of California subject to regulation under the State's Porter-Cologne Water Quality Control Act (Division 7 of the Water Code) and the Federal Clean Water Act. The SIP establishes implementation provisions for priority pollutant criteria, promulgated by the USEPA through the National Toxics Rule (NTR) and California Toxics Rule (CTR), and for priority pollutant objectives established by the Regional Water Quality Control Boards (RWQCBs) in their water quality control plans (basin plans). The SIP also establishes monitoring requirements for 2,3,7,8-TCDD equivalents, chronic toxicity control provisions, and Pollutant Minimization Programs.

California Toxics Rule (CTR)

16. On May 18, 2000, the USEPA published the *Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* (Federal Register, Volume 65, Number 97, 18 May 2000). These standards are generally referred to as the CTR. The CTR

specifies water quality criteria (WQC) for numerous priority pollutants, some of which are applicable to the Discharger's effluent discharges.

Other Regulatory Bases

17. WQOs/WQC and effluent limitations in this permit are based on the SIP; the plans, policies and WQOs and criteria of the Basin Plan; the CTR; *Quality Criteria for Water* (EPA 440/5-86-001, 1986 and subsequent amendments, "USEPA Gold Book"); applicable Federal Regulations (40 CFR Parts 122 and 131); the NTR (57 FR 60848, 22 December 1992, and 40 CFR Part 131.36(b)); NTR Amendment (60 Federal Register 22229-22237, 4 May 1995); USEPA "National Recommended Water Quality Criteria" compilation (63 Federal Register 68354-68364); and Best Professional Judgment (BPJ), as defined in the Basin Plan. Where numeric effluent limitations have not been established or updated in the Basin Plan, 40 CFR 122.44(d) specifies that water quality-based effluent limits (WQBELs) may be set based on USEPA criteria and supplemented, where necessary, by other relevant information to attain and maintain narrative water quality criteria to fully protect designated beneficial uses. Discussion of the specific bases and rationale for effluent limits are given in the associated Fact Sheet for this Permit, which is incorporated by reference as part of this Order.
18. In addition to the documents listed above, other USEPA guidance documents upon which BPJ was developed may include in part:
 - Region 9 Guidance For NPDES Permit Issuance, February 1994;
 - USEPA Technical Support Document for Water Quality Based Toxics Control, March 1991 (TSD);
 - Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria, October 1, 1993;
 - Whole Effluent Toxicity (WET) Control Policy, July 1994;
 - National Policy Regarding Whole Effluent Toxicity Enforcement, August 14, 1995;
 - Clarifications Regarding Flexibility in 40 CFR Part 136 Whole Effluent Toxicity (WET) Test Methods, April 10, 1996;
 - Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Programs Final, May 31, 1996;
 - Draft Whole Effluent Toxicity (WET) Implementation Strategy, February 19, 1997.

Basis for Effluent Limitations

General Basis

19. **Federal Water Pollution Control Act.** Effluent limitations and toxic effluent standards, established pursuant to Sections 301 through 305, and 307 of the Federal Water Pollution Control Act and amendments thereto, are applicable to the discharges subject to this Order. The technology based limits for conventional pollutants are established in accordance with the Basin Plan and 40 CFR 125.

Applicable Water Quality Objectives and Criteria

20. The WQOs and WQC applicable to the receiving water of this discharger are from the Basin Plan, the CTR, and the NTR.
 - a. The Basin Plan specifies numeric WQOs for 10 priority toxic pollutants, as well as narrative WQOs for toxicity and bioaccumulation in order to protect beneficial uses. The pollutants for

which the Basin Plan specifies numeric objectives are arsenic, cadmium, chromium (IV), copper in freshwater, lead, mercury, nickel, silver, zinc, and cyanide. The narrative toxicity objective states in part that “[a]ll waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms.” (Basin Plan, page 3-4) The bioaccumulation objective states in part that “[c]ontrollable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life.” (Basin Plan, page 3-2) Effluent limitations and provisions contained in this Order are designed to implement these objectives, based on current available information.

- b. The CTR specifies numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries, such as here, except that where the Basin Plan’s Tables 3-3 and 3-4 specify numeric objectives for certain of these priority toxic pollutants, the Basin Plan’s numeric objectives apply over the CTR (except in the South Bay south of the Dumbarton Bridge).
- c. The NTR established numeric aquatic life criteria for selenium for waters of San Francisco Bay upstream to and including Suisun Bay and the Sacramento-San Joaquin Delta. This includes the receiving water for this Discharger.

Basin Plan Receiving Water Salinity Policy

- 21. The Basin Plan states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable WQOs. Freshwater objectives apply to discharges to waters that are both outside the zone of tidal influence and have salinities lower than 5 parts per thousand (ppt) at least 75 percent of the time. Saltwater objectives shall apply to discharges to waters with salinities greater than 5 ppt at least 75 percent of the time. For discharges to waters with salinities in between the two categories or tidally influenced freshwaters that support estuarine beneficial uses, the objectives shall be the lower of the salt or freshwater objectives, based on ambient hardness, for each substance. (Basin Plan, p. 4-13)

CTR Receiving Water Salinity Policy

- 22. The CTR states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable WQC. Freshwater criteria shall apply to discharges to waters with salinities equal to or less than 1 ppt at least 95 percent of the time. Saltwater criteria shall apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to water with salinities in between these two categories, or tidally influenced freshwaters that support estuarine beneficial uses, the criteria shall be the lower of the salt or freshwater criteria (the latter calculated based on ambient hardness), for each substance.

Receiving Water Salinity

- 23. The receiving waters for the subject discharge are the waters of the Lower Bay. Regional Board staff assessed salinity data obtained from the two RMP stations nearest to the NBSU discharge, San Bruno Shoal and Redwood Creek, for the period from 1993 to 1998 to determine the receiving waters’ salinity. This assessment indicates the receiving waters are marine based on the definitions in the CTR and the Basin Plan. All of the 32 values are above the 10 part per thousand (ppt) criteria.

Technology-Based Effluent Limitations

- 24. Technology-based effluent limitations ensure that full secondary treatment is achieved by the wastewater treatment facility, as required under 40 CFR Part 133.102. Effluent limitations for the following conventional pollutants are defined by the Basin Plan (Table 4-2, page 4-69):

- Total Suspended Solids (TSS);
- 85% Removal of BOD5 and TSS;
- Total Coliform Organisms;
- pH;
- Settleable Matter;
- Oil and Grease; and
- Total Chlorine Residual.

Water Quality-Based Effluent Limitations

25. The WQBELs regulating toxic substances are derived from water quality criteria listed in the Basin Plan, the NTR, the CTR, the U.S. EPA Gold Book, and/or BPJ. This Order's WQBELs are revised and updated from the previous permit's limits and their presence in this Order is based on the Reasonable Potential Analysis evaluation of the Discharger's data, as described the Reasonable Potential Analysis section, below. Numeric WQBELs are required for all constituents that have reasonable potential to cause or contribute to an excursion above any water quality standard (that have reasonable potential). Reasonable potential is determined, and final WQBELs are developed, using the methodology outlined in the SIP. If the Discharger demonstrates that meeting the final limits is infeasible, and provides justification for a compliance schedule, then interim limits will be established, with a compliance schedule for achieving the final limits. The attached Fact Sheet contains further details about specific WQBELs, and the Fact Sheet is incorporated as part of this Order. Below is a justification for maximum daily effluent limits in lieu of weekly limits.

- a. Maximum Daily Effluent Limits (MDEL) are used in this permit to protect against acute water quality effects. It is impracticable to use weekly average limitations to guard against acute effects. Although weekly averages are effective for monitoring the performance of biological wastewater treatment plants, the MDELs are necessary for preventing fish kills or mortality to aquatic organisms.
- b. NPDES regulations, the SIP, and U.S. EPA's Technical Support Document (TSD) provide the basis to establish MDELs:

NPDES regulations at 40 Code of Federal Regulations section 122.45(d) state:

- "For continuous discharges all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall *unless impracticable* be stated as:
- (1) Maximum daily and average monthly discharge limitations for all discharges other than publicly owned treatment works; and
 - (2) Average weekly and average monthly discharge limitations for POTWs." (Emphasis added.)
- c. The SIP (page 8, Section 1.4) requires water quality based effluent limits be expressed as maximum daily effluent limitations (MDELs) and average monthly effluent limitations (AMELs).
 - d. The TSD (page 96) states a maximum daily maximum limitation is appropriate for two reasons:
 - i. The basis for the 7-day average for POTWs derives from the secondary treatment requirements. This basis is not related to the need for assuring achievement of water quality standards.
 - ii. The 7-day average, which could comprise up to seven or more daily samples, could average out peak toxic concentrations and therefore the discharge's potential for causing acute toxic

effects would be missed. A maximum daily limit would be toxicologically protective of potential acute toxicity impacts.

Receiving Water Ambient Background Data used in Calculating WQBELs

26. The most representative location for ambient background data for this discharge is the Central Bay. The RMP stations at Yerba Buena Island and Richardson Bay located in the Central Bay have been sampled for most of the inorganic and some of the organic toxic pollutants. WQBELs were calculated using RMP data from the Yerba Buena Island and Richardson Bay RMP stations from 1992 through 1998 for inorganics, and 1993 through 1998 for organics. However, not all the constituents listed in the CTR were analyzed by the RMP during this time. By letter dated August 6, 2001, the Board's Executive Officer addressed this data gap by requiring the Discharger to conduct additional monitoring pursuant to Section 13267 of the California Water Code.

Constituents Identified in the 303(d) List

27. On May 12, 1999, the USEPA approved a revised list of impaired waterbodies prepared by the State. The list, hereinafter referred to as the 303(d) list, was prepared in accordance with Section 303(d) of the Federal Clean Water Act to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. The Lower Bay is listed as impaired. The pollutants impairing the Lower Bay include copper, mercury, nickel, PCBs total, dioxin TEQ and furan compounds, chlordane, DDT, Dieldrin, diazinon, and dioxin TEQ-like PCBs. The Lower Bay is also impaired by exotic species.

Dilution and Assimilative Capacity

28. Board staff has evaluated the assimilative capacity of the receiving water for 303(d) listed pollutants for which the subject Discharger has reasonable potential in its discharge. The evaluation included a review of RMP data (local and Central Bay stations), effluent data, and WQOs/WQC. From this evaluation, the assimilative capacity has been determined to be highly variable due to the complex hydrology of the receiving water. Therefore, there is uncertainty associated with the representative nature of the appropriate ambient background data to conclusively quantify the assimilative capacity of the receiving water. Pursuant to Section 1.4.2.1 of the SIP, "[d]ilution credit may be limited or denied on a pollutant-by-pollutant basis...."
- a. For certain bioaccumulative pollutants, based on BPJ that there is no more assimilative capacity in the receiving water, dilution credit is not included in calculating the final WQBELs. This determination is based on available data on concentrations of these pollutants in aquatic organisms, sediment, and the water column. The Board placed selenium, mercury, and PCBs on the CWA Section 303(d) list. The USEPA added dioxin and furan compounds, chlordane, Dieldrin, and 4,4'-DDT onto the CWA 303(d) list. Dilution credit is not included for mercury, selenium, polynuclear aromatic hydrocarbons (PAHs), PCBs, Dieldrin, 4,4-DDE, dioxins and furans. The following factors support a conclusion that there is no more assimilative capacity in the Bay for these pollutants.
- i. San Francisco Bay fish tissue data shows that these pollutants, except for PAHs and selenium, exceed screening levels. The fish tissue data are contained in "Contaminant Concentrations in Fish from San Francisco Bay 1997" (May 1997). Denial of dilution credits for these pollutants is further justified by fish advisories for the San Francisco Bay. The Office of Environmental Health and Hazard Assessment (OEHHA) performed a preliminary review of the data from the 1994 San Francisco Bay pilot study, "Contaminated Levels in Fish Tissue from San Francisco Bay," in which elevated levels of chemical contaminants were seen in fish tissue. Based on these results, OEHHA issued an interim

- consumption advisory covering certain fish species from the Bay in December 1994. This interim consumption advisory was issued and is still in effect due to potential health concerns arising from exposure to sport fish in the Bay contaminated with mercury, PCBs, dioxins, and pesticides (e.g. DDT).
- ii. For selenium, the denial of dilution credits is based on Bay waterfowl tissue data presented in the California Department of Fish and Game's Selenium Verification Study (1986 – 1990). These data show elevated levels of selenium in the livers of waterfowl that feed on bottom dwelling organisms such as clams. Additionally, in 1987, the OEHHA issued an advisory on the consumption of two species of diving ducks in the North Bay, which were found to have high tissue levels of selenium. This advisory is still in effect.
- b. Furthermore, Section 2.1.1 of the SIP states that for bioaccumulative compounds on the 303(d) list, the Board should consider whether mass-loadings should be limited to current levels. The Board finds that mass loading limits are warranted for certain bioaccumulative compounds on the 303(d) list for the receiving waters of this Discharger. This is to ensure that this Discharger does not contribute further to impairment of the narrative objective for bioaccumulation.
 - c. For non-bioaccumulative constituents, a conservative allowance of 10:1 dilution for discharges to the Bay is necessary for protection of beneficial uses. The basis for limiting the dilution credit is based on SIP provisions in Section 1.4.2. The following outlines the basis for derivation of the dilution credit.
 - i. A far-field background station is appropriate because the receiving waterbody (Bay) is a very complex estuarine system with highly variable and seasonal upstream freshwater inflows and diurnal tidal saltwater inputs.
 - ii. Due to the complex hydrology of the San Francisco Bay, a mixing zone cannot be accurately established.
 - iii. Previous dilution studies do not fully account for the cumulative effects of other wastewater discharges to the system.
 - iv. The SIP allows limiting a mixing zone and dilution credit for persistent pollutants (e.g., copper, silver, nickel and lead).

The main justification for using a 10:1 dilution credit is uncertainty in accurately determining ambient background and uncertainty in accurately determining the mixing zone in a complex estuarine system with multiple wastewater discharges. The detailed rationale is described in the Fact Sheet.

Total Maximum Daily Loads (TMDLs) and Waste Load Allocations (WLAs)

- 29. Based on the 303(d) list of pollutants impairing the Lower Bay, the Board plans to adopt TMDLs for these pollutants no later than 2010, with the exception of dioxin and furan compounds. The Board defers development of the TMDL for dioxin and furan compounds to the USEPA. Future review of the 303(d) list for the Lower Bay may result in revision of the schedules and/or provide schedules for other pollutants.
- 30. The TMDLs will establish waste load allocations (WLAs) and load allocations for point sources and non-point sources, respectively, and will result in achieving the water quality standards for the

waterbody. The final effluent limitations for this discharge will be based on WLAs that are derived from the TMDLs.

31. **Compliance Schedules:** Pursuant to Section 2.1.1 of the SIP, "the compliance schedule provisions for the development and adoption of a TMDL only apply when: (a) the Discharger requests and demonstrates that it is infeasible to achieve immediate compliance with a CTR criterion; and (b) the Discharger has made appropriate commitments to support and expedite the development of the TMDL. In determining appropriate commitments, the RWQCB should consider the Discharger's contribution to current loadings and the Discharger's ability to participate in TMDL development." As described in a later finding under the heading **Interim Limits and Compliance Schedules**, by reports of May 31, 2002, and supplemented on December 4, 2002, the Discharger has claimed that it is infeasible to achieve immediate compliance for certain pollutants. Also, the Discharger has agreed to assist the Board in TMDL development through active participation and contribution to the Bay Area Clean Water Agencies (BACWA). The Board adopted Resolution No. 01-103, on September 19, 2001, which authorizes the Executive Officer of the Board to enter into a Memorandum of Understanding with BACWA and other parties to accelerate the development of Water Quality Attainment Strategies, including TMDLs for the San Francisco Bay-Delta and its tributaries.
32. The following summarizes the Board's strategy to collect water quality data and to develop TMDLs:
- a. Data collection – The Board will request that dischargers collectively assist in developing and implementing analytical techniques capable of detecting 303(d)-listed pollutants to at least their respective levels of concern or WQOs/WQC. The Board will require dischargers to characterize the pollutant loads from their facilities into the water quality-limited waterbodies. The results will be used in the development of TMDLs, but may also be used to update/revise the 303(d) list and/or change the WQOs/WQC for the impaired waterbodies including the Lower Bay.
 - b. Funding mechanism – The Board has received, and anticipates continued receipt of, resources from federal and state agencies for the development of TMDLs. To ensure timely development of TMDLs, the Board intends to supplement these resources by allocating development costs among dischargers through the RMP or other appropriate funding mechanisms.

Interim Limits and Compliance Schedules

33. Until final WQBELs or WLAs are adopted, state and federal antibacksliding and antidegradation policies and the SIP require that the Regional Board include interim effluent limitations. The interim effluent limitations will be the lower of current performance or the previous Order's limits.

This permit establishes interim performance-based limits, in addition to interim concentration limits, to restrict mass loadings of 303(d)-listed bioaccumulative pollutants to their current levels. These interim performance-based mass limits are based on recent discharge data. Where pollutants have existing high detection limits, interim mass limits are not established because meaningful performance-based mass limits cannot be calculated for pollutants with non-detectable concentrations. However, the Discharger has the option to investigate alternative analytical procedures that result in lower detection limits, either through participation in new RMP special studies or through equivalent studies conducted jointly with other dischargers.

34. Compliance schedules are established (1) based on Section 2.2 of the SIP for limits derived from CTR WQC, or (2) based on the Basin Plan for limits derived from the Basin Plan WQOs. If an existing discharger cannot immediately comply with a new and more stringent effluent limitation, the SIP and the Basin Plan authorize a compliance schedule in the permit. To qualify for a compliance

schedule, both the SIP and the Basin Plan require that the discharger demonstrate that it is infeasible to achieve immediate compliance with the new limit. The SIP and Basin Plan require that the following information be submitted to the Board to support a finding of infeasibility:

- i. Documentation that diligent efforts have been made to quantify pollutant levels in the discharge and sources of the pollutant in the waste stream, including the results of those efforts;
 - ii. Documentation of source control and/or pollution minimization efforts currently under way or completed;
 - iii. A proposed schedule for additional or future source control measures, pollutant minimization or waste treatment; and
 - iv. A demonstration that the proposed schedule is as short as practicable.
35. On June 3, 2002 and as supplemented on December 4, 2002, the Discharger submitted a final feasibility study asserting it is infeasible to immediately comply with the WQBELs calculated according to SIP Section 1.4 for copper, mercury, selenium, and tributyltin. Board staff conducted a statistical analysis of recent WWTP performance data with respect to these metals (see attached Fact Sheet). Based on that statistical analysis, the Board concurs with the Discharger's feasibility analysis. Therefore, this Order establishes compliance schedules that extend beyond 1 year for these pollutants. Pursuant to the SIP and 40 CFR 122.47, the Board shall establish interim numeric limitations and interim requirements to control the pollutants. This Order establishes interim limits for these pollutants based on the previous permit limits or existing plant performance. Specific basis for these interim limits are described in the following findings for each pollutant.

Antibacksliding and Antidegradation

36. The interim limits in this permit are in compliance with antidegradation and antibacksliding policies because the interim limits hold the Discharger to current facility performance and the final limits are in compliance with antibacksliding requirements.

Specific Basis

Reasonable Potential Analysis

37. As specified in 40 CFR 122.44(d) (1) (i), permits are required to include WQBELs for all pollutants "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard." Using the method prescribed in Section 1.3 of the SIP, Board staff have analyzed the WQCP effluent data to determine if the discharge has a reasonable potential to cause or contribute to an excursion above a State water quality standard ("Reasonable Potential Analysis" or "RPA"). For all parameters that have reasonable potential, numeric WQBELs are required. The RPA compares the effluent data with numeric and narrative WQOs in the Basin Plan and numeric WQC from the CTR or NTR.
38. ***Reasonable Potential Methodology.*** The method for performing an RPA requires identifying the observed maximum pollutant concentration in the effluent for each constituent, based on effluent concentration data gathered over a 3-year period, from January 1999 through December 2001. The RPA methodology is detailed in Section 1.3 of the SIP. There are three triggers in determining reasonable potential:
- a. The first trigger is activated when the maximum effluent concentration (MEC) is greater than the lowest applicable WQO/WQC, which has been adjusted for pH and translator data, if appropriate. An MEC that is greater than the (adjusted) WQO/WQC means that there is

reasonable potential for that constituent to cause or contribute to an excursion above the WQO/WQC and a WQBEL is required. (Is the MEC \geq WQO/WQC?)

- b. The second trigger is activated if the observed maximum ambient background concentration (B) is greater than the adjusted WQOs/WQC and the MEC is less than the adjusted WQO/WQC. If B is greater than the adjusted WQO/WQC, then a WQBEL is required. (Is $B > WQO/WQC$?)
- c. The third trigger is activated after a review of other information determines that a WQBEL is required even though both MEC and B are less than the WQO/WQC. A limit is only required under certain circumstances to protect beneficial uses.

39. **Summary of RPA Data and Results.** The RPA was based on effluent monitoring data from January 1999 through December 2001 for metals, phenols, cyanide, and organic pollutants. Based on the RPA methodology described above and in the SIP, the following constituents have been found to have reasonable potential to cause or contribute to an excursion above WQOs/WQC: copper, mercury, nickel, selenium, silver, zinc, 4,4-DDE, Dieldrin, cyanide, tributyltin, and tetrachloroethylene.

40. **RPA Determinations.** The MEC, WQOs/WQC, bases for the WQOs/WQC, background concentrations used and reasonable potential conclusions from the RPA are listed in the following table for all constituents analyzed. The RPA results for most of the constituents in the CTR (Nos. 17-126 except 38, 56, 60-62, 64, 73-74, 86-87, 92, 100, 109, 111, and 114) were not determined because of the lack of background data, an objective/criteria, or effluent data. (Further details on the RPA can be found in the Fact Sheet.)

Constituent ¹	WQO/ WQC ($\mu\text{g/L}$)	Basis ²	MEC ($\mu\text{g/L}$)	Maximum Ambient Background Conc. ($\mu\text{g/L}$)	Reasonable Potential
Arsenic	36	BP	3.2	2.22	No
Cadmium	9.3	BP	0.80	0.13	No
Chromium	50	BP	4	4.4	No
Copper*	3.7	CTR (#6)	32.7	2.45	Yes
Lead	5.6	BP	4.0	2.38	No
Mercury*	0.025	BP	0.05	0.006	Yes
Nickel*	7.1	BP	12.3	5.9	Yes
Selenium*	5.0	NTR	5.0	0.19	Yes
Silver	2.3	BP	2.6	0.07	Yes
Zinc	58	BP	92	13.3	Yes
Cyanide	1	NTR	36	Not available (NA)	Yes
TCDD TEQ	1.4×10^{-8}	CTR (#16)	Insufficient data	NA	Undetermined ⁴
Tributyltin	0.005	BP	0.045	NA	Yes
Dieldrin* ³	0.00014	CTR (#111)	All non-detect	0.000264	Yes
4,4'-DDE* ³	0.00059	CTR (#109)	All non-detect	0.00069	Yes
Tetrachloro- ethylene	8.85	CTR (#38)	19	NA	Yes
CTR #s 17- 126 except 38, 54, 109 or 111	Various or NA	CTR	Non-detect, less than WQO, or no WQO	Less than WQO or Not Available	No or Undetermined ⁵

1. *Constituents on 303(d) list, dioxin applies to Toxicity Equivalent Factors (TEQ) of 2,3,7,8-TCDD.
2. BP = Basin Plan; CTR = California Toxics Rule; H = assumed hardness of 100 in mg/L as CaCO₃.
3. Dieldrin and 4,4'-DDE: RPA = Yes, based on B > WQC.
4. Undetermined due to lack of sufficient effluent and background data.
5. Undetermined due to lack of background data, lack of objective/criteria, or lack of effluent data (See Fact Sheet Table for full RPA results).

RPA Results for Impairing Pollutants

41. While TMDLs and WLAs are being developed, interim concentration limits are established in this permit for 303(d)-listed pollutants that have reasonable potential to cause or contribute to an excursion above the water quality standard. In addition, mass limits are required for bioaccumulative 303(d)-listed pollutants that can be reliably detected. Constituents on the 303(d) list for which the RPA determined a need for effluent limitations are copper, mercury, nickel, selenium, 4,4'-DDE (chemically linked to DDT), and Dieldrin. Final determination of reasonable potential for other constituents identified on the 303(d) list could not be performed due to lack of available effluent data (e.g., dioxin), lack of background data or lack of an established WQO or WQC.

Interim Limits with Compliance Schedules

42. The Discharger has demonstrated infeasibility to meet the WQBELs calculated according to Section 1.4 of the SIP for copper, mercury, tributyltin, and selenium. Therefore, this Order establishes compliance schedules for these pollutants. For constituents on the 303(d)-list with limits based on CTR or NTR criteria (i.e., copper and selenium), this Order establishes a 5-year compliance schedule as allowed by the CTR and SIP. For constituents (i.e., mercury) on the 303(d)-list with limits based on the Basin Plan numeric WQOs, this Order establishes compliance schedules through March 31, 2010. For cyanide, there is insufficient background data to calculate a true WQBEL, so this Order specifies a data collection period through May 18, 2003. The basis for these schedules is further described in the Fact Sheet.

Specific Pollutants

43. Phenols. This Order implements the policy and regulations of the CTR and SIP in regard to phenolic compounds. The previous permit contained a monthly average effluent limit for total phenols of 300 µg/L. The CTR specifies criteria for individual phenolic compounds which are a subset of total phenols. The previous total phenols limit may be more restrictive for several phenolic compounds (e.g., phenol and 2,4-dimethylphenol) than the WQBELs calculated from the SIP, owing to their high CTR criteria. However, for most of the phenolic compounds in the CTR, the WQBELs would be more restrictive. Retaining limits for both total and individual phenolics would potentially limit and count the same pollutants twice. Therefore, this Order follows the requirements of the CTR and SIP in lieu of the Basin Plan technology limit because 1) the water quality considerations of the CTR and SIP are generally more restrictive, and 2) the low historic concentrations of total phenols in the discharge. None of the individual phenolic compounds included in the CTR, except phenol, was detected in the effluent during 1999-2001. Phenol was detected once in August 1999 at 880 µg/L well below the WQC of 4,600,000 µg/L. Therefore, no reasonable potential is shown at this time. Under the requirements of the August 6, 2001 letter, this Order requires the Discharger to collect additional data with a permit re-opener to establish limits, if new data show that there is reasonable potential and limits are necessary.
44. Dioxin.

- (1) The CTR establishes a numeric human health WQC of 0.14 picograms per liter (pg/L) for 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD) based on consumption of aquatic organisms.
 - (2) The preamble of the CTR states that California NPDES permits should use toxicity equivalents (TEQs) where dioxin-like compounds have reasonable potential with respect to narrative criteria. The preamble further states that USEPA intends to use the 1998 World Health Organization Toxicity Equivalence Factor (TEF)¹ scheme in the future and encourages California to use this scheme in State programs. Additionally, the CTR preamble states USEPA's intent to adopt revised water quality criteria guidance subsequent to its health reassessment for dioxin-like compounds.
 - (3) The SIP applies to all toxic pollutants, including dioxins and furans. The SIP requires a limit for 2,3,7,8-TCDD, if a limit is necessary, and requires monitoring for a minimum of 3 years by all major NPDES dischargers for the other sixteen dioxin and furan compounds.
 - (4) The Basin Plan contains a narrative WQO for bio-accumulative substances:
"Many pollutants can accumulate on particulates, in sediments, or bio-accumulate in fish and other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered."
This narrative WQO applies to dioxin and furan compounds, based in part on the scientific community's consensus that these compounds associate with particulates, accumulate in sediments, and bioaccumulate in the fatty tissue of fish and other organisms.
 - (5) The USEPA's 303(d) listing determined that the narrative objective for bio-accumulative pollutants was not met because of the levels of dioxins and furans in the fish tissue.
 - (6) The Discharger has monitored for dioxins and furans. The limited data set is all non-detect, although all results have been above the WQC. Therefore, it is currently impossible to conduct an RPA or calculate interim limits. Pursuant to the SIP, the Discharger will be required to monitor for dioxins and furans. Once there is enough information, an RPA will be conducted to determine if limits are required.
45. 4,4'-DDE and Dieldrin. Board staff could not determine MECs for 4,4'-DDE and Dieldrin because the effluent data consisted of all non detect values, and all of the detection limits were reported higher than the WQC (Section 1.3 of the SIP). Board staff conducted the RPA by comparing the WQC with RMP ambient background concentration data gathered using research-based sample collection, concentration, and analytical methods. This analysis concluded that the background concentrations are greater than the WQC, and therefore, that 4,4'-DDE and Dieldrin have reasonable potential, and numeric WQBELs are required.
46. The current 303(d) list includes the Lower Bay as impaired for Dieldrin and DDT; 4,4'-DDE is chemically linked to the presence of DDT. The Board intends to develop TMDLs that will lead towards overall reduction of Dieldrin and 4,4'-DDE. The WQBELs specified in this Order may be changed to reflect the WLAs from this TMDL. Studies are ongoing to investigate the feasibility and reliability of different methods of increasing sample volumes to lower the detection limits for pesticides. If analytical methodologies improve and the detection levels decrease to a point that show discharge concentrations above the limits in this Order, the Board will re-evaluate the Discharger's feasibility to comply with the limits and determine the need for a compliance schedule and interim performance limits at that time. Since Dieldrin and 4,4'-DDE are both bioaccumulative

¹ The 1998 WHO scheme includes TEFs for dioxin-like PCBs. Since dioxin-like PCBs are already included within "Total PCBs", for which the CTR has established a specific standard, dioxin-like PCBs are not included in this Order's version of the TEF scheme.

and on the 303(d) list due to fish tissue concentrations, there is no assimilative capacity, and no dilution credit was allowed in the final limit calculations.

47. *Other organics.* The Discharger has generally performed organics sampling semi-annually since 1997. This sampling effort has covered most of the organic constituents listed in the CTR. This data set was used to perform the RPA for other organic pollutants. The full RPA is presented as an attachment in the Fact Sheet. In most cases (about 100 out of the 126 priority pollutants), reasonable potential cannot be determined because detection limits are higher than the lowest WQC and/or ambient background concentrations are not available. The Discharger will continue to participate in the RMP, including monitoring for these constituents, using analytical methods that provide the most sensitive detection limits. When sufficient data are available, an RPA will be conducted to determine whether to add numeric effluent limitations to the Order or to continue monitoring.
48. *Effluent RP Monitoring.* This Order does not include effluent limitations for constituents that do not show a reasonable potential, but continued monitoring for these pollutants is required as described in the August 6, 2001 letter, which is further described in a later finding. If concentrations of these constituents increase significantly, the Discharger will be required to investigate the source of the increases and establish remedial measures, if the increases result in a reasonable potential to cause or contribute to an excursion above the applicable WQO/WQC.
49. *Permit Reopener.* The Order includes a reopener provision to allow numeric effluent limitations to be added or deleted in the future for any constituent that exhibits or does not exhibit, respectively, reasonable potential. The Regional Board will make this determination based on monitoring results.

Development of Effluent Limitations

Copper

50. *Copper Water Quality Criteria.* The saltwater criteria for copper in the CTR is 3.1 µg/L for chronic protection and 4.8 µg/L for acute protection. Included in the CTR are translator values to convert the dissolved criteria to total criteria. The Discharger may also perform a translator study to determine a more site-specific translator. The SIP, Section 1.4.1, and the June 1996 USEPA guidance document, entitled *The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion*, describe this process and provide guidance on how to establish a site-specific translator. Using the CTR translator of 0.83, translated criteria of 3.7 µg/L for chronic protection and 5.8 µg/L for acute protection were used to calculate effluent limitations.
51. *Water Effects Ratios.* The CTR provides for adjusting the criteria by deriving site-specific objectives (SSOs) through application of the water-effect ratio (WER) procedure. The USEPA includes WERs to assure that the metals criteria are appropriate for the chemical conditions under which they are applied. A WER accounts for differences between a metal's toxicity in laboratory dilution water and its toxicity in water at the site. The USEPA's February 22, 1994 Interim Guidance on Determination and Use of Water Effects Ratios for Metals superseded all prior USEPA guidance on this subject. If the Discharger decides to pursue SSOs, they shall be developed in accordance with procedures contained in Section 5.2 of the SIP.
52. *Copper TMDL Status.* The Discharger and other dischargers from north of the Dumbarton Bridge are currently conducting impairment assessment studies designed to collect additional data on copper in the Lower Bay. The Regional Board will consider these studies in its 303(d) listing decision in 2002, and when considering any SSO proposed for copper. The final WQBEL for copper will be based on the WLA contained in a TMDL if one is completed. Alternatively, the copper WQBELs may be

developed consistent with SIP procedures in Section 5.2 if the impairment studies support adoption of an SSO. If the 303(d) listing process in 2002 concludes with a finding that the Lower Bay is not impaired by copper, then a de-listing of the Lower Bay for copper will result. Existing RMP dissolved copper results show most of the Bay north of the Dumbarton Bridge complies with the CTR's 3.1 µg/L dissolved copper WQC.

53. *Copper Effluent Limitation.* Based on the RPA, there is reasonable potential for exceedances of the WQC for copper in the subject discharge. The final WQBEL for copper will be based on the WLA contained in a TMDL. Alternatively, the copper WQBEL may be developed consistent with SIP procedures in Section 5.2 if the impairment studies support adoption of a SSO. If the 303(d) listing process in 2002 concludes that Lower Bay is not impaired by copper, then a de-listing of the Bay for copper will result. An interim performance-based limit of 38.5 µg/L was derived for copper based on recent treatment plant performance using the 99.87 percentile of the effluent data (or three standard deviations above the mean). The previous permit included a daily average copper limit of 37 µg/L. So, this permit includes the previous permit limit, as it is more stringent than the interim performance-based limit.
54. *Treatment Plant Performance and Compliance Attainability for Copper.* Effluent concentrations during the past three years (January 1999 through December 2001) range from 1.6 to 32.7 µg/L (36 samples). All of the 36 samples were in compliance with the previous permit limit, and it is expected the WQCP can comply with the interim limit of 37 µg/L.
55. *Copper Source Control.* This Order requires the Discharger to develop pollution prevention and source control programs to maximize practicable control over copper sources to the plant.

Nickel

56. *Effluent Limitations.* The nickel WQBELs, calculated pursuant to the SIP, are 68 µg/L daily maximum and 31 µg/L monthly average (see the attached Fact Sheet for details), as depicted in Effluent B.7., below. The final WQBELs for nickel will be based on the WLA contained in a TMDL or an SSO, if developed.
57. *Treatment Plant Performance and Compliance Attainability.* The nickel MEC reported during the period January 1999 – December 2001 was 17 µg/L, and it is expected that the WQCP can comply with the final WQBELs.

Mercury

58. *Mercury Water Quality Objectives.* Both the Basin Plan and CTR include objectives/criteria that govern mercury in the receiving water. The Basin Plan specifies objectives for the protection of aquatic life of 0.025 µg/L as a 4-day average and 2.1 µg/L as a 1-hour average. The CTR specifies a long-term average criterion for protection of human health of 0.051 µg/L.
59. *Mercury TMDL.* The current 303(d) list includes the Lower Bay as impaired by mercury, due to exceedances in fish tissue levels. Methyl-mercury is a persistent bioaccumulative pollutant. The Regional Board intends to develop a TMDL that will reduce mercury mass loadings in the Lower Bay. The final mercury effluent limitations will be based on the Discharger's WLA in the TMDL, and the permit will be revised to include the final WQBELs as enforceable limitations.
60. *Mercury Control Strategy.* The Regional Board, together with other stakeholders, will cooperatively develop source control strategies as part of TMDL development. Municipal discharge point sources

may not be the most significant mercury loadings to the Bay. Therefore, the currently preferred strategy is applying interim mass loading limits to point source discharges while focusing mass reduction efforts on other more significant and controllable sources. While the TMDL is being developed, the Discharger will cooperate in maintaining ambient receiving water conditions by complying with performance-based mercury mass emission limits. Therefore, this Order includes interim concentration and mass loading effluent limitations for mercury, as described in the findings below. The Discharger is required to implement source control measures and cooperatively participate in special studies as described below.

61. *Concentration-Based Mercury Effluent Limitation.* Interim effluent limitations are granted for mercury since the Discharger has demonstrated and the Board verified that it is infeasible to immediately comply with the final WQBELs, included in the Fact Sheet as a point of reference. This Order establishes an interim monthly average limit for mercury based on staff's analysis of the performance of over 20 secondary treatment plants in the Bay Area. This analysis is described in a Board staff report titled "Staff Report, Statistical Analysis of Pooled Data from Region-wide Ultra-clean Mercury Sampling". The objective of the analysis is to provide an interim concentration limit that characterizes regional facility performance using only ultra-clean data and compliance of which will ensure no further degradation of the receiving water quality resulting from the discharge. The conclusions of the report demonstrate that the statistical performance-based mercury limit for a secondary plant is 0.087 ug/L, and for an advanced secondary plant is 0.023 ug/L. The Discharger operates a secondary-level treatment plant, therefore the value of the interim concentration-based limit is 0.087 ug/L. The previous Order includes a monthly average limit of 0.21 ug/L and daily average limit of 1 ug/L. Based on Board staff's report titled "Watershed Management of Mercury in the San Francisco Bay Estuary: Total Maximum Daily Load Report to U.S. EPA," dated June 30, 2000, municipal sources are a very small contributor of the mercury load to the Bay. Because of this, it is unlikely that the TMDL will require reduction efforts beyond the source controls required by this permit.
62. *Mass-Based Mercury Effluent Limitation.* This Order establishes an interim mercury mass-based effluent limitation of 0.071 kg/month. Based on treatment plant performance at the 99.87 percentile value (or average + 3* standard deviation) from effluent data gathered from January 1999 through December 2001, the total mass loadings were calculated using a 12-month moving average. This mass-based effluent limitation maintains current loadings until a TMDL is established and is consistent with state and federal antidegradation and antibacksliding requirements. The final mass-based effluent limitation will be based on the WLA derived from the mercury TMDL.
63. *Treatment Plant Performance and Compliance Attainability.* Effluent concentrations from January 1999 through December 2001 ranged from 0.01 to 0.05 µg/L (36 samples). All of the 36 samples were below the existing mercury limit of 0.21 µg/L, and it is expected the WQCP can comply with the interim limit of 0.087 µg/L.
64. *Mercury Source Control and Special Studies.* As a prerequisite to being granted a compliance schedule and interim limit, the Discharger committed to implement source control and pollution prevention activities in its infeasibility analysis, submitted on May 31, 2002, as supplemented on December 4, 2002. This Order establishes interim concentration and mass loading limits; and requires the Discharger to continue its existing pollution prevention programs to maximize practicable control over influent mercury sources.

Selenium

65. *Selenium Water Quality Criterion.* The national chronic criterion for selenium is 5 µg/L, total recoverable. Footnote q in the CTR's Table of Criteria for Priority Toxic Pollutants states: "This criterion was promulgated for specific waters in California in the NTR and promulgated in the total recoverable form. The specific waters to which the NTR criterion applies include: Waters of the San Francisco Bay upstream to and including Suisun Bay and the Sacramento-San Joaquin Delta..."
66. *Concentration-Based Selenium Effluent Limitation.* Interim effluent limitations are granted for selenium since the Discharger has demonstrated and the Board verified that it is infeasible to immediately comply with the final WQBELs, included in the Fact Sheet as a point of reference. Therefore, an interim performance-based limit is established in this permit, and the final limits will either be based on the Waste Load Allocation (WLA) derived from a TMDL or will be the limit calculated according to the SIP, Section 1.4. The SIP requires an interim numeric effluent limit for the pollutant based on current treatment facility performance, or previous permit limitations, whichever is more stringent. This Order establishes interim daily maximum concentration effluent limit for selenium of 17 µg/L, based on current facility performance at the 99.87 percentile (using a standard statistical probit analysis). This interim limit is lower than the previous limit of 50 µg/L.
67. *Mass-Based Selenium Effluent Limitation.* The current 303(d) list includes Central San Francisco Bay as impaired by selenium. It is determined that a mass-based effluent limitation for selenium cannot be assigned at this time because the effluent data set contains a single quantified value, which cannot be statistically analyzed to calculate a performance-based mass emission limit.
68. *Treatment Plant Performance and Compliance Attainability.* The effluent (detected concentrations) discharged to Lower Bay has been in consistent compliance with the previous permit limit for selenium of 50 µg/L. Effluent concentrations during the most recent three years (January 1999-December 2001) ranged from <0.1 to 5.0 µg/L (37 samples). It is expected the WQCP can comply with the interim limit of 17 µg/L.
69. *Selenium Source Control.* This Order requires the Discharger to develop pollution prevention and source control programs to maximize practicable control over selenium sources to the plant.

Silver

70. *Silver Water Quality Objectives.* To protect salt water aquatic life, the Basin Plan specifies a WQO for silver of 2.3 µg/L as an instantaneous maximum.
71. *Silver Effluent Limitations.* This Order contains silver WQBELs because, based on the RPA, there is reasonable potential for exceedances of the WQO in the discharge. Based on the comparison of the effluent monitoring data and the AMEL calculated as required by Section 1.4 of the SIP, the Discharger can comply with the final WQBELs (i.e., AMEL of 5 µg/L and MDEL of 22 µg/L).
72. *Treatment Plant Performance and Compliance Attainability.* The effluent data set from January 1999 through December 2001 consisted of detected values ranging from 0.1 to 2.64 µg/L and it is expected the WQCP can comply with the final WQBELs.

Zinc

73. *Zinc Water Quality Objectives.* To protect salt water aquatic life, the Basin Plan specifies objectives for zinc of 58 µg/L as a 24-hour average and 170 µg/L as an instantaneous maximum.
74. *Zinc Effluent Limitation.* This Order contains zinc WQBELs because, based on the RPA, there is reasonable potential for exceedances of the WQO in the discharge. Based on the comparison of the

effluent monitoring data and the AMEL calculated as required by Section 1.4 of the SIP, the Discharger can comply with the final WQBELs (i.e., AMEL of 483 $\mu\text{g/L}$ and MDEL of 742 $\mu\text{g/L}$).

75. *Treatment Plant Performance and Compliance Attainability.* The effluent data set from January 1999 through December 2001 consisted of detected values ranging from 16.9 to 92 $\mu\text{g/L}$, and it is expected the WQCP can comply with the final WQBELs

Cyanide

76. *Cyanide Water Quality Criteria.* The NTR specifies that the salt water Criterion Chronic Concentration (CCC) of 1 $\mu\text{g/L}$ for cyanide is applicable to the Lower Bay. This CCC value is below the presently achievable reporting limit of approximately 3 to 5 $\mu\text{g/L}$.
77. *Cyanide Effluent Limitation.* Effluent data from 1999-2001 was considered to develop an interim concentration-based effluent limitation. An interim performance-based concentration limit of 65 $\mu\text{g/L}$ was derived for cyanide based on recent treatment plant performance using the 99.87 percentile of the effluent data (or three standard deviations above the mean). This limit is less stringent than the existing permit limit of 10 $\mu\text{g/L}$. Therefore, the existing permit limit is included in the Order.
78. *Cyanide SSO.* A regional discharger-funded study is underway for development of a cyanide SSO. The cyanide study plan was submitted on October 29, 2001. The final report is to be submitted to the Board by June 30, 2003. There are also no cyanide background data currently available from either the Yerba Buena Island or Richardson Bay Stations. Ambient cyanide data are being collected as required by the August 6, 2001 letter. The WQBELs will be recalculated based on additional ambient background information, and/or a cyanide SSO. If the Discharger requests and demonstrates that it is infeasible to comply with the final limits, the permit revision will establish a maximum 5-year compliance schedule.
79. *Treatment Plant Performance and Compliance Attainability.* The effluent data set from January 1999 through December 2001 consisted of detected values ranging from 5 to 112 $\mu\text{g/L}$. The Discharger exceeded the existing permit limit of 10 $\mu\text{g/L}$ six times over this time period.
80. *Cyanide Study and Source Control.* Because of the Discharger's difficulty in complying with the existing permit limit for cyanide, this Order includes specific requirements for this constituent. Within one year of permit issuance, the Discharger is required to conduct and submit to the Board the results of a study demonstrating whether detected values of cyanide in the effluent are artifacts of the analytical method or represent actual cyanide loadings to the treatment plant. Concurrently, within one year of permit issuance, the Discharger must develop, submit to the Board for approval, and implement a plan to identify and control all potential sources of the cyanide loadings to the treatment plant.

Tributyltin and Tetrachloroethylene

81. *Water Quality Criteria.* In the CTR, the saltwater criteria for tributyltin are 0.01 $\mu\text{g/L}$ for chronic protection and 0.37 $\mu\text{g/L}$ for acute protection. The only criterion for tetrachloroethylene is the human health value of 8.85 $\mu\text{g/L}$.
82. *Tributyltin and Tetrachloroethylene Effluent Limitations.* This Order contains tributyltin and tetrachloroethylene WQBELs because, based on the RPA, there is reasonable potential for exceedances of the WQC. The final effluent limitations calculated as required by Section 1.4 of the SIP are: tributyltin (AMEL=0.008 $\mu\text{g/L}$ and MDEL=0.016) and tetrachloroethylene (89 $\mu\text{g/L}$ and 178 $\mu\text{g/L}$). For these constituents, the statistical analysis consisted of comparing the MEC with the

AMEL. This simplified analysis was appropriate given the small number of detectable values for the effluent.

83. *Treatment Plant Performance and Compliance Attainability.* The MECs reported during the past three years are 19 µg/L for tetrachloroethylene and 0.045 µg/L for tributyltin. Since the MEC for tetrachloroethylene is less than the WQBEL referenced above, the final WQBEL is applied in this permit. Since the MEC for tributyltin is greater than the WQBEL referenced above, the MEC is applied as the interim limit in this permit.

4,4'-DDE and Dieldrin

84. *Water Quality Criteria.* In the CTR, the lowest criteria for 4,4'-DDE and Dieldrin are the human health values of 0.00059 µg/L and 0.00014 µg/L, respectively. The criteria are well below the Minimum Levels (MLs) of 0.05 µg/L and 0.01 µg/L identified in Appendix 4 of the SIP.
85. *4,4'-DDE and Dieldrin Effluent Limitations.* This Order contains 4,4'-DDE and Dieldrin WQBELs because, based on the RPA, there is reasonable potential for exceedances of the WQC for 4,4'-DDE and Dieldrin. The Board intends to establish a TMDL that will lead towards overall reduction of 4,4'-DDE and Dieldrin mass loadings into San Francisco Bay. If the Discharger is found to be contributing to 4,4'-DDE and Dieldrin impairment in San Francisco Bay, the final effluent limitations will be based on the Discharger's WLA in the TMDL. 4,4'-DDE and Dieldrin are bioaccumulative and on the 303(d) list because of fish tissue concentrations. Therefore, there is no assimilative capacity and no dilution credit was allowed in the final limit calculations.
86. *Treatment Plant Performance and Compliance Attainability.* Effluent data from 1999-2001 for 4,4'-DDE and Dieldrin consists of six samples each. Neither was detected in the effluent in any of the samples. Compliance will be demonstrated by showing no detection above the SIP MLs.

Whole Effluent Acute Toxicity

87. This Order includes effluent limits for whole effluent acute toxicity. Compliance evaluation is based on 96-hour flow-through bioassays. USEPA promulgated updated test methods for acute and chronic toxicity bioassays on October 16, 1995, in 40 CFR Part 136. Dischargers have identified several practical and technical issues that need to be resolved before implementing the new procedures, referred to as the 4th Edition. The primary unresolved issue is the use of younger, possibly more sensitive fish, which may necessitate a reevaluation of permit limits. SWRCB staff recommended to the Regional Boards that new or renewed permit holders be allowed a time period in which laboratories can become proficient in conducting the new tests. A provision is included in this Order granting the Discharger 12 months to implement the new test method. In the interim, the Discharger is required to continue using the current test protocols.

Whole Effluent Chronic Toxicity

- 88.a. *Program History.* The Basin Plan contains a narrative toxicity objective stating that "All waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental responses to aquatic organisms" and that "there shall be no chronic toxicity in ambient waters." In 1986, the Board initiated the Effluent Toxicity Characterization Program (ETCP), with the goal of developing and implementing toxicity limits for each discharger based on actual characteristics of both receiving waters and waste streams. Dischargers were required to monitor their effluent using critical life stage toxicity tests to generate information on toxicity,

test species sensitivity and effluent variability to allow development of appropriate chronic toxicity effluent limitations. In 1988 and 1991, selected dischargers conducted two rounds of effluent characterization. A third round was completed in 1995, and the Board is evaluating the need for an additional round. Board guidelines for conducting toxicity tests and analyzing results were published in 1988 and last updated in 1991. The Board adopted Order No. 92-104 in August 1992 amending the permits of eight dischargers to include numeric chronic toxicity limits. However, due to the court decision which invalidated the California Enclosed Bays and Estuaries Plan and Inland Surface Waters Plan, on which Order No. 92-104 was based, the SWRCB stated, by letter dated November 8, 1993, that the Board will have to reconsider the Order. In the meantime, permits now include narrative rather than numeric limits. The numeric test values should then be used as toxicity "triggers" to first accelerate monitoring and then initiate Toxicity Reduction Evaluations (TREs).

- b. *Regional Board Program Update.* The Board intends to reconsider Order No. 92-104 as directed by the SWRCB, and to update, as appropriate, the Board's Whole Effluent Toxicity (chronic and acute) program guidance and requirements. This will be done based on analysis of discharger routine monitoring and ETCP results, and in accordance with current USEPA and SWRCB guidance. In the interim, decisions regarding the need for and scope of chronic toxicity requirements for individual dischargers will continue to be made based on BPJ as indicated in the Basin Plan.
- c. *Discharge Monitoring.* The Discharger completed an effluent chronic toxicity screening study in November 1998, which concluded that the *mysid* was the most sensitive species to the effluent.
- d. *Permit Requirements.* In accordance with USEPA and SWRCB Task Force guidance, Section 4 of the SIP, and based on BPJ, this Permit includes requirements for chronic toxicity monitoring based on the Basin Plan narrative toxicity objective. This Permit includes the Basin Plan narrative toxicity objective as the applicable effluent limit, implemented via monitoring with numeric values as "triggers" to initiate accelerated monitoring and to initiate a chronic toxicity reduction evaluation (TRE). The permit requirements for chronic toxicity are also consistent with the CTR and SIP requirements.
- e. *Permit Reopener.* The Board will consider amending this Permit to include numeric toxicity limits if the Discharger fails to aggressively implement all reasonable control measures included in its approved TRE workplan, following detection of consistent significant non-artifactual toxicity.

Coliform Limits

- 89. The Basin Plan's Table 4-2 and its footnotes allow fecal coliform limitations to be substituted for total coliform limitations provided that the Discharger conclusively demonstrates "through a program approved by the Regional Board that such substitution will not result in unacceptable adverse impacts on the beneficial uses of the receiving waters." Several dischargers since 1992 have conducted chlorination reduction and receiving water impact monitoring studies, to support substitution of fecal for total coliform effluent limits. In the Board's prior actions to substitute fecal for total coliform limits, the Board has chosen to adopt the relevant fecal coliform WQOs as effluent limits. For deep water dischargers with water contact recreation (REC-1) beneficial uses (e.g., board surfing) in the vicinity of their outfalls, this has resulted in applying the Basin Plan's 5-day geometric mean fecal coliform WQO of 200 MPN/100mL and 90th percentile limit of 400 MPN/100mL as effluent limits.

RWQCB Order #98-117 amended the Discharger's original Order, replacing total coliform limitations with the fecal coliform limitations included in this Order.

Pollution Prevention and Minimization

90. The Discharger has established a Pollution Prevention Program under the requirements specified by the Regional Board.
- a. Section 2.4.5 of the SIP specifies under what situations and for which priority pollutant(s) (i.e., reportable priority pollutants) the Discharger shall be required to conduct a Pollutant Minimization Program in accordance with Section 2.4.5.1.
 - b. There may be some redundancy between the Pollution Prevention Program and the Pollutant Minimization Program requirements.
 - c. Where the two programs' requirements overlap, the Discharger is allowed to continue/modify/expand its existing Pollution Prevention Program to satisfy the Pollutant Minimization Program requirements.
 - d. For copper, mercury, selenium and cyanide, the Discharger will conduct any additional source control measures in accordance with California Water Code 13263.3 and Section 2.1 of the SIP. Section 13263.3 establishes a separate process outside of the NPDES permit process for preparation, review, approval, and implementation of pollution minimization measures.
91. The Board staff intends to require an objective third party to establish model programs, and to review program proposals and reports for adequacy. This is to encourage use of Pollution Prevention and does not abrogate the Board's responsibility for regulation and review of the Discharger's Pollution Prevention Program. Board staff will work with the Discharger and other POTWs to identify the appropriate third party for this effort.

Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy

92. *Insufficient Effluent and Ambient Background Data.* Board staff's review of the effluent and ambient background monitoring data found that there were insufficient data to determine reasonable potential and calculate numeric WQBELs, where appropriate, for most pollutants listed in the SIP.
93. *SIP- Required Dioxin study.* The SIP states that each Board shall require major and minor POTWs and industrial dischargers in its region to conduct effluent monitoring for the 2,3,7,8-TCDD congeners whether or not an effluent limit is required for 2,3,7,8-TCDD. The monitoring is intended to assess the presence and amounts of the congeners being discharged to inland surface waters, enclosed bays, and estuaries. The Boards will use these monitoring data to establish strategies for a future multi-media approach to control these chemicals.
94. On August 6, 2001, the Board sent a letter to all the permitted dischargers pursuant to Section 13267 of the California Water Code requiring the submittal of effluent and receiving water data on priority pollutants. This formal request for technical information addresses the insufficient effluent and ambient background data, and the dioxin study. The letter (described above) is referenced throughout the permit as the "August 6, 2001 Letter".

95. Pursuant to the August 6, 2001 Letter from Board Staff, the Discharger is required to submit workplans and sampling results for characterizing the levels of selected constituents in the effluent and ambient receiving water.
96. *Monitoring Requirements (Self-Monitoring Program).* The SMP includes monitoring at the outfalls for conventional, non-conventional, and toxic pollutants, and acute and chronic toxicity. For metals, this Order continues the monthly monitoring requirements included in the previous Order. Further, this Order requires twice yearly monitoring for Dieldrin, 4,4'-DDE, tributyltin, and tetrachloroethylene to demonstrate compliance with final effluent limitations. In lieu of near field discharge specific ambient monitoring, it is acceptable that the Discharger participate in collaborative receiving water monitoring with other dischargers under the provisions of the August 6, 2001 letter, and the RMP.

Optional Studies

97. *Optional Mass Offset.* This Order contains requirements to prevent further degradation of the impaired waterbody. Such requirements include the adoption of interim mass limits that are based on treatment plant performance, provisions for aggressive source control, feasibility studies for wastewater reclamation, and treatment plant optimization. After implementing these efforts, the Discharger may find that further net reductions of the total mass loadings of the 303(d)-listed pollutants to the receiving water can only be achieved through a mass offset program. This Order includes an optional provision for a mass offset program.
98. *Copper Translator Study.* The Basin Plan does not establish a saltwater WQO for copper. Therefore, the CTR WQC for copper, 3.1 µg/L dissolved, is the applicable standard. Since NPDES permit limits must be expressed as a total recoverable metal value, a translator is required to convert the dissolved objective into a total recoverable objective. Per Appendix 3 of the SIP, the default translator used in this permit is 0.83, which converts the 3.1 µg/L dissolved criterion to 3.7 µg/L total criterion. An optional copper translator study is included in this permit to encourage the Discharger to develop a local translator value for copper in place of the default translator value of 0.83 established in the SIP. The Discharger may use local RMP station data in the development of the translator.

Other Discharge Characteristics and Permit Conditions

99. *Pretreatment Program.* The Discharger has implemented and is maintaining a U.S. EPA approved pretreatment program in accordance with Federal Pretreatment Regulations (40 CFR 403) and the requirements specified in Attachment F, "Pretreatment Requirements."
100. *O & M Manual.* An Operations and Maintenance Manual is maintained by the Discharger for purposes of providing plant and regulatory personnel with a source of information describing all equipment, recommended operation strategies, process control monitoring, and maintenance activities. In order to remain a useful and relevant document, the manual shall be kept updated to reflect significant changes in treatment facility equipment and operation practices.
101. *NPDES Permit.* This Order serves as an NPDES Permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code [California Environmental Quality Act (CEQA)] pursuant to Section 13389 of the California Water Code.

102. *Notification.* The Discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharge and have been provided an opportunity to submit their written views and recommendations. Responses to written comments are hereby incorporated by reference as part of this Order.
103. *Public Hearing.* The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code and regulations adopted thereunder, and to the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, that the Cities of South San Francisco and San Bruno shall comply with the following:

A. DISCHARGE PROHIBITIONS

1. Discharge of treated wastewater at a location or in a manner different from that described in this Order is prohibited.
2. Discharge of wastewater at any point where it does not receive an initial dilution of at least 10:1 is prohibited.
3. The bypass or overflow of untreated or partially treated wastewater to waters of the State, either at the treatment plant or from the collection system or pump stations tributary to the treatment plant, is prohibited except as provided for bypasses under the conditions stated in 40 CFR 122.41 (m)(4) and in Standard Provision A.13. Bypassing of individual treatment processes, for example during periods of high wet weather flow, is allowable provided that the combined discharge of fully treated and partially treated wastewater complies with the effluent and receiving water limitations in this Order, and the Discharger complies with all the outstanding requirements of the CDO.
4. The discharge of average dry weather flows greater than 13 mgd is prohibited.
5. The discharge of non-storm water (materials other than storm water), except unpolluted landscape irrigation, into the storm drain systems and watercourses is prohibited. NPDES permitted discharges are exempt from this prohibition.

B. EFFLUENT LIMITATIONS

Conventional Pollutants

The following effluent limitations apply to effluent discharged to the combined NBSU force-main outfall (Sampling Station E-001):

1. The effluent shall not exceed the following limits:

Constituent	Units	Monthly Average(2)	Weekly Average(2)	Daily Maximum(2)	Instantaneous Maximum
a. Biochemical Oxygen Demand(BOD) mg/L		30	45	--	--

b. Total Suspended Solids (TSS)	mg/L	30	45	--	--
c. Oil & Grease	mg/L	10	--	20	--
d. Settleable Matter	ml/l-hr	0.1	--	0.2	--
e. Total Chlorine Residual (1)	mg/L	--	--	--	0.0

- (1) Requirement defined as below the limit of detection in standard test methods defined in the latest USEPA approved edition of *Standard Methods for the Examination of Water and Wastewater*. The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine and sodium bisulfite dosage (including a safety factor) and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Board staff will conclude that these false positive chlorine residual exceedances are not violations of this permit limit. Chlorine residual compliance may be demonstrated by monitoring the combined discharge at the NBSU common outfall (E-002).
- (2) Limits apply to the average concentration of all samples collected during the averaging period (monthly = calendar month; weekly = calendar week; daily = calendar day-midnight to midnight).

2. pH: The pH of the effluent shall not exceed 9.0 nor be less than 6.0.

The Discharger may elect to use a continuous on-line monitoring system(s) for measuring pH. If the discharger employs continuous monitoring, then the Discharger shall be in compliance with the pH limitation specified herein, provided that both of the following conditions are satisfied: (i) The total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and (ii) No individual excursion from the range of pH values shall exceed 60 minutes.

3. 85 Percent Removal, BOD and TSS

The arithmetic mean of the biochemical oxygen demand (BOD₅, 20°C) and TSS values, for effluent samples collected in each calendar month shall not exceed 15 percent of the arithmetic mean of the respective values for influent samples collected at approximately the same times during the same period.

4. Fecal Coliform Bacteria

The treated wastewater, at some point in the treatment process prior to discharge, shall meet the following limits of bacteriological quality:

- a. The geometric mean value of the last five samples for fecal coliform density shall not exceed a Most Probable Number (MPN) of fecal coliform bacteria of 200 MPN/100 ml; and
- b. The 90th percentile value of the last ten samples shall not exceed a fecal coliform bacteria level of 400 MPN/100 ml.

Toxic Pollutants

5. Whole Effluent Acute Toxicity

Representative samples of the effluent shall meet the following limits for acute toxicity. Compliance with these limits shall be achieved in accordance with Provision E.5 of this Order.

- a. The survival of bioassay test organisms in 96-hour bioassays of undiluted effluent shall be:
 - (3) An 11-sample median value of not less than 90 percent survival ^{(b(1))}; and
 - (4) An 11-sample 90th percentile value of not less than 70 percent survival ^{(b(2))}.
- b. These acute toxicity limits are further defined as follows:
 - (1) 11-sample median limit:

Any bioassay test showing survival of 90 percent or greater is not a violation of this limit. A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit, if five or more of the past ten or fewer bioassay tests also show less than 90 percent survival.
 - (2) 90th percentile limit:

Any bioassay test showing survival of 70 percent or greater is not a violation of this limit. A bioassay test showing survival of less than 70 percent represents a violation of this effluent limit, if one or more of the past ten or fewer bioassay tests also shows less than 70 percent survival.
 - (3) If the Discharger demonstrates to the satisfaction of the Executive Officer that toxicity exceeding the levels cited above is caused by ammonia, and that the ammonia in the discharge is not adversely impacting receiving water quality or beneficial uses, then such toxicity does not constitute a violation of this effluent limit.

6. Chronic Toxicity

Representative samples of the effluent shall meet the following requirements for chronic toxicity. Compliance with the Basin Plan narrative chronic toxicity objective shall be achieved in accordance with Provision E.6 of this Order and shall be demonstrated according to the following tiered requirements based on results from representative samples of the treated final effluent meeting test acceptability criteria:

- 1) Routine monitoring;
- 2) Accelerated monitoring after exceeding a three sample median value of 10 chronic toxicity units² (TUC) or a single sample maximum of 20 TUC or greater. Accelerated monitoring shall consist of monitoring at frequency intervals of one half the interval given for routine monitoring in the SMP of this Order;
- 3) Return to routine monitoring if accelerated monitoring does not exceed either "trigger" in "2", above;
- 4) Initiate approved toxicity identification evaluation/toxicity reduction evaluation (TIE/TRE) work plan, if accelerated monitoring confirms consistent toxicity above either "trigger" in "2", above;
- 5) Return to routine monitoring after appropriate elements of TRE work plan are implemented, and either the toxicity drops below "trigger" level in "2", above, or, based on the results of the TRE, the Executive Officer authorizes a return to routine monitoring.

7. Toxic Substances: The effluent shall not exceed the following limits:

² A TUC equals 100 divided by the no observable effect level (NOEL). The NOEL is determined from IC, EC, or NOEC values. Monitoring and TRE requirements may be modified by the Executive Officer in response to the degree of toxicity detected in the effluent or in ambient waters related to the discharge. Failure to conduct the required toxicity tests or a TRE within a designated period shall result in the establishment of effluent limitations for chronic toxicity.

<u>Constituent</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>	<u>Interim Daily Maximum</u>	<u>Interim Monthly Average</u>	<u>Units</u>	<u>Notes</u>
a. Copper			37		µg/L	(1), (4)
b. Mercury				0.087	µg/L	(1), (2)
c. Nickel	68	31			µg/L	(1)
d. Silver	22	5			µg/L	(1)
e. Selenium			17		µg/L	(1), (4)
f. Zinc	500	483			µg/L	(1)
g. Cyanide			10		µg/L	(1), (5), (6)
h. Dieldrin	0.00028	0.00014			µg/L	(1), (3)
i. 4,4'-DDE	0.00119	0.00059			µg/L	(1), (3)
j. Tributyltin			0.045		µg/L	(1), (4)
k. Tetrachloro-ethylene	178	89			µg/L	(1)

Footnotes:

- (1) (a) Compliance with these limits is intended to be achieved through secondary treatment and source control.
- (b) All analyses shall be performed using current USEPA methods, or equivalent methods approved in writing by the Executive Officer.
- (c) Limits apply to the average concentration of all samples collected during the averaging period (Daily = 24-hour period; Monthly = calendar month).
- (2) Mercury: Effluent mercury monitoring shall be performed by using ultra-clean sampling and analysis techniques, with a method detection limit of 0.002 µg/L or lower. The interim limits for mercury shall remain in effect until March 31, 2010, or until the Board amends the limit based on the Waste Load Allocation in the TMDL for mercury. However, during the next permit reissuance, Board staff may re-evaluate the interim limits.
- (3) Dieldrin and 4,4'-DDE: As outlined in Section 2.4.5 of the SIP, compliance with these final limits is determined by comparing the effluent data with the corresponding Minimum Levels in Appendix 4 of the SIP: 0.01 µg/L for Dieldrin and 0.05 µg/L for 4,4'-DDE. A daily maximum or monthly average valued for a given constituent shall be considered non-compliant with the effluent limits only if it exceeds the effluent limitation and the reported ML for that constituent.
- (4) This interim limit shall remain in effect until March 31, 2008 for tributyltin. These interim limits for copper and selenium shall remain in effect until March 31, 2008, or until the Board amends the limit based on site-specific objectives or the Waste Load Allocations in the TMDLs for copper and selenium. However, during the next permit reissuance, Board staff may re-evaluate the interim limits.
- (5) Cyanide: Compliance may be demonstrated by measurement of weak acid dissociable cyanide. The interim limit shall remain in effect until May 18, 2003, or until the Board amends the limit

based on additional background data and/or site-specific objectives for cyanide. However, during the next permit revision, Board staff may re-evaluate the interim limit.

- (6) Cyanide: The point of compliance for this interim cyanide limit is E-002 (the dechlorinated NBSU combined outfall sample). Other NBSU members sample cyanide from their individual effluent stations, before joining the combined outfall. If the Discharger exceeds this cyanide effluent limit at the E-002 sample, the Discharger is responsible for the cyanide violation.

8. Interim Mercury Mass Emission Limit

Until TMDL and WLA efforts for mercury provide enough information to establish different WQBELs, the Discharger shall demonstrate that the total mercury mass loading from the discharge to the Lower Bay has not increased by complying with the following:

- a. Interim mass emission limit: The mass emission limit for mercury is 0.071 kilograms per month (kg/month).
- b. Compliance with this limit shall be evaluated using monthly moving averages of total mass load, computed as described below:

$$12 - \text{Month Moving Average, kg / month} = \frac{\sum (\text{Last 12 months' Monthly Total Mass Loads, kg / month})}{12}$$

where

$$\text{Monthly Total Mass Load, kg / month} = Q * C * 0.1151$$

where

- Q = monthly average WWTP effluent flow, MGD, as reported
C = effluent concentration, $\mu\text{g/L}$, corresponding to each month's flow.

If more than one concentration measurement is obtained in a calendar month, the average of these measurements is used as the monthly concentration value for that month. If test results are less than the method detection limit used, the concentration value shall be assumed to be equal to the method detection limit.

0.1151 = unit conversion factor to obtain kg/month using monthly average flow in MGD and concentration in $\mu\text{g/L}$.

- c. The Discharger shall submit a cumulative total of mass loadings for the previous 12 months with each monthly Self-Monitoring Report. Compliance each month will be determined based on the 12-month moving averages over the previous 12 months of monitoring. The Discharger may use monitoring data collected under accelerated schedules (i.e., special studies) to determine compliance.
- d. The mercury and selenium TMDLs and WLAs will supersede this mass emission limitation upon their completion. The Clean Water Act's antibacksliding rule, Section 402(o), indicates that this Order may be modified to include a less stringent requirement following completion of the TMDLs and WLAs, if the requirements for an exception to the rule are met.

C. RECEIVING WATER LIMITATIONS

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

- a. Floating, suspended, or deposited macroscopic particulate matter or foam;
 - b. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;
 - c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
 - d. Visible, floating, suspended, or deposited oil or other products of petroleum origin; and
 - e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or which render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.
2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State at any one place within 1 foot of the water surface:
- a. Dissolved Oxygen: 5.0 mg/L, minimum

The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, then the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.
 - b. Dissolved Sulfide: 0.1 mg/L, maximum
 - c. pH: Variation from normal ambient pH by more than 0.5 pH units.
 - d. Un-ionized Ammonia: 0.025 mg/L as N, annual median; and
0.4 mg/L as N, maximum.
 - e. Nutrients: Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
3. The discharge shall not cause a violation of any particular water quality standard for receiving waters adopted by the Board or the State Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

D. SLUDGE MANAGEMENT PRACTICES

1. The Discharger presently disposes of all stabilized, dewatered biosolids (sewage sludge) from the Discharger's wastewater treatment plant by land disposal at a permitted landfill. If the Discharger desires to dispose of sludge by a different method, the Discharger shall notify the Board and USEPA in writing before start-up of the alternative disposal practice.

2. Sludge that is disposed of in a municipal solid waste landfill must meet the requirements of 40 CFR 258. The Discharger's annual self-monitoring report shall include the amount of sludge disposed of, and the landfill(s) to which it was sent.
3. All sludge generated by the discharger must be disposed of in a municipal solid waste landfill, or in accordance with the requirements of 40 CFR 503. All the requirements of 40 CFR Part 503 are enforceable by the USEPA whether or not they are stated in an NPDES permit or other permit issued to the Discharger.
4. Sludge treatment, storage, and disposal or reuse shall not create a nuisance or result in groundwater contamination.
5. The treatment and temporary storage of sewage sludge at the Discharger's wastewater treatment facility shall not cause waste material to be in a position where it will be carried from the sludge treatment and storage site and deposited in the waters of the State.
6. Permanent on-site storage or disposal of sewage sludge at the Discharger's wastewater treatment facility is not authorized by this permit. A report of Waste Discharge shall be filed and the site brought into compliance with all applicable regulations prior to commencement of any such activity by the Discharger.
7. The Board may amend this permit prior to expiration if changes occur in applicable state and federal sludge regulations.

E. PROVISIONS

1. Permit Compliance and Rescission of Previous Waste Discharge Requirements

The Discharger shall comply with all sections of this Order beginning on April 1, 2003.

Requirements prescribed by this Order supersede the requirements prescribed by Order No. 97-086 as amended by 98-117. Order Nos. 97-086 and 98-117 are hereby rescinded upon effectiveness of this Order.

Special Studies

2. Regional Cyanide Study and Schedule - Site-Specific Objective Study for Cyanide

The Discharger shall participate in a regional discharger-funded effort to conduct a study for cyanide data collection and development of site-specific objective. The cyanide study plan was submitted on October 29, 2001. The Board intends to include, in a subsequent permit revision, a final cyanide limit based on the study as an enforceable limit.

- a. Upon approval by the Executive Officer, the Discharger shall participate in the implementation of the current study. Annual reports shall be submitted by January 31 of each year documenting the progress of the ambient background characterization, and site-specific objective studies. Annual report shall summarize the findings and progress to date, and include a realistic assessment of the shortest practicable time required to perform the remaining tasks of the studies.

- b. By May 18, 2003, the Discharger, in co-operation with other Dischargers, shall complete the ambient background water quality characterization study for cyanide, and submit a report of the results.
- c. By June 30, 2003, the Discharger, in co-operation with other Dischargers, shall submit a report of completion for the site-specific objective study for cyanide. This study shall be adequate to allow the Board to initiate the development and adoption of the site-specific objective for cyanide. This permit may be reopened to include a revised final limit based on the site-specific objective developed.

3. Discharger-Specific Cyanide Study and Schedule

The Discharger shall develop and implement a facility-specific plan to address exceedances of the interim limit for cyanide. This plan shall specifically identify sources of cyanide influent to the treatment and describe and implement specific control measures to reduce cyanide loadings.

- a. The Discharger shall submit a workplan acceptable to the Executive Officer, by June 15, 2003. The plan shall include but not be limited to an evaluation of whether detected levels of cyanide in the effluent are due to analytical problems or actual loadings and, as appropriate, develop and implement cyanide source control measures to provide for near term compliance with the interim limit.
- b. The Discharger shall submit a report by June 15, 2004, documenting the results gathered from implementing the workplan above. Annual updates, as needed, shall be submitted through the already implemented pollution prevention program.

4. Pollutant Prevention and Minimization Program

- a. The Discharger shall continue to conduct and improve its existing Pollution Prevention Program for copper, mercury, selenium, and tributyltin, in order to reduce pollutant loadings to the treatment plant and therefore to the receiving waters.
- b. The Discharger shall submit an annual report, acceptable to the Executive Officer, no later than February 28th of each year. Annual reports shall cover January through December of the preceding year. Annual reports shall include at least the following information:
 - (i) *A brief description of its treatment plant, treatment plant processes and service area.*
 - (ii) *A discussion of the current pollutants of concern.* Periodically, the Discharger shall analyze its own situation to determine which pollutants are currently a problem and/or which pollutants may be potential future problems. This discussion shall include the reasons why the pollutants were chosen.
 - (iii) *Identification of sources for the pollutants of concern.* This discussion shall include how the Discharger intends to estimate and identify sources of the pollutants
 - (iv) *Identification of tasks to reduce the sources of the pollutants of concern.* This discussion shall identify and prioritize tasks to address the Discharger's pollutants of concern. The Discharger may implement tasks themselves or participate in group, regional, or national tasks that will address its pollutants of concern. The Discharger is strongly encouraged to participate in group, regional, or national tasks that will address its pollutants of concern whenever it is efficient and appropriate to do so. A time line shall be included for the implementation of each task.

- (v) *Continuation of tenant outreach program.* The Discharger shall implement a public outreach program to communicate pollution prevention to its service area.
 - (vi) *Discussion of criteria used to measure the Program's and tasks' effectiveness.* The Discharger shall establish criteria to evaluate the effectiveness of its Pollution Prevention Program. This shall also include a discussion of the specific criteria used to measure the effectiveness of each of the tasks in item b. (iv), b. (v), and b. (vi).
 - (vii) *Documentation of efforts and progress.* This discussion shall detail all of the Discharger's activities in the Pollution Prevention Program during the reporting year.
 - (viii) *Evaluation of Program's and tasks' effectiveness.* This Discharger shall utilize the criteria established in b. (vii) to evaluate the Program's and tasks' effectiveness.
 - (ix) *Identification of specific tasks and time schedules for future efforts.* Based on the evaluation, the Discharger shall detail how it intends to continue or change its tasks in order to more effectively reduce the amount of pollutants to the treatment plant, and subsequently in its effluent.
- c. According to Section 2.4.5 of the SIP, when there is evidence that a priority pollutant is present in the effluent above an effluent limitation and either:
- (i) A sample result is reported as detected, but not quantified (less than the Minimum Level) and the effluent limitation is less than the reported Minimum Level; or
 - (ii) A sample result is reported as not detected (less than the Method Detection Limit) and the effluent limitation is less than the Method Detection Limit,
- the Discharger shall expand its existing Pollution Prevention Program to include the reportable priority pollutant. A priority pollutant becomes a reportable priority pollutant when (1) there is evidence that it is present in the effluent above an effluent limitation and either (c)(i) or (c) (ii) is triggered or (2) if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported Minimum Level.
- d. If triggered by the reasons in Provision 3.c. and notified by the Executive Officer, the Discharger's Pollution Prevention Program shall, within 6 months, also include:
- (i) An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling, or alternative measures approved by the Executive Officer when it is demonstrated that source monitoring is unlikely to produce useful analytical data;
 - (ii) Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system, or alternative measures approved by the Executive Officer when it is demonstrated that influent monitoring is unlikely to produce useful analytical data;
 - (iii) Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;
 - (iv) Development of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and
 - (v) An annual status report that shall be sent to the RWQCB including:
 - 1. All Pollution Prevention monitoring results for the previous year;
 - 2. A list of potential sources of the reportable priority pollutant(s);
 - 3. A summary of all actions undertaken pursuant to the control strategy; and
 - 4. A description of actions to be taken in the following year.

- e. To the extent where the requirements of the Pollution Prevention Program and the Pollutant Minimization Program overlap, the Discharger is allowed to continue/modify/expand its existing Pollution Prevention Program to satisfy the Pollutant Minimization Program requirements.
- f. These Pollution Prevention/Pollutant Minimization Program requirements are not intended to fulfill the requirements in The Clean Water Enforcement and Pollution Prevention Act of 1999 (Senate Bill 709).

Toxicity Requirements

5. Whole Effluent Acute Toxicity

Compliance with acute toxicity requirements of this Order shall be achieved in accordance with the following:

- a. From permit adoption date to **September 30, 2003**:
 - 1) Compliance with the acute toxicity effluent limits of this Order shall be evaluated by measuring survival of test organisms exposed to 96-hour continuous flow-through bioassays.
 - 2) Test organisms shall be fathead minnows and three-spined sticklebacks unless specified otherwise in writing by the Executive Officer.
 - 3) All bioassays shall be performed according to the "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms," 3rd Edition, with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).
- b. From **no later than October 1, 2003 and after**:
 - 1) Compliance with the acute toxicity effluent limits of this Order shall be evaluated by measuring survival of test organisms exposed to 96-hour continuous flow-through bioassays, or static renewal bioassays. If the Discharger will use static renewal tests, or continue to use 3rd Edition Methods, they must submit a technical report by March 1, 2003, identifying the reasons why flow-through bioassay is not feasible using the approved USEPA protocol (4th edition).
 - 2) Test organisms shall be fathead minnows or rainbow trout unless specified otherwise in writing by the Executive Officer.
 - 3) All bioassays shall be performed according to the "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms," 4th Edition, with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

6. Whole Effluent Chronic Toxicity

The Discharger shall monitor and evaluate effluent discharged to the NBSU outfall for chronic toxicity in order to demonstrate compliance with the Basin Plan narrative toxicity objective.

Compliance with this requirement shall be achieved in accordance with the following.

- a. The Discharger shall conduct routine chronic toxicity monitoring in accordance with the SMP of this Order.
- b. If data from routine monitoring exceed either of the following evaluation parameters, then the Discharger shall conduct accelerated chronic toxicity monitoring. Accelerated monitoring shall consist of monitoring at frequency intervals of one half the interval given for routine monitoring in the SMP of this Order.

- c. Chronic toxicity evaluation parameters:
- 1) A three sample median value of 10 TU_c and
 - 2) A single sample maximum value of 20 TU_c.
 - 3) These parameters are defined as follows:
 - (a) Three-sample median: A test sample showing chronic toxicity greater than 10 TU_c represents an exceedance of this parameter, if one of the past two or fewer tests also show chronic toxicity greater than 10 TU_c.
 - (b) TU_c (chronic toxicity unit): A TU_c equals 100/NOEL (e.g., If NOEL = 100, then toxicity = 1 TU_c). NOEL is the no observed effect level determined from IC, EC, or NOEC values ^(c).
 - (c) The terms IC, EC, NOEL and NOEC and their use are defined in Attachment C of this Order.
- d. If data from accelerated monitoring tests are found to be in compliance with the evaluation parameters, then routine monitoring shall be resumed.
- e. If accelerated monitoring tests continue to exceed either evaluation parameter, then the Discharger shall initiate a chronic toxicity reduction evaluation (TRE).
- f. The TRE shall be conducted in accordance with the following:
- (1) The Discharger shall prepare and submit to the Board for Executive Officer approval a TRE work plan. An initial generic workplan shall be submitted within 120 days of the date of adoption of this Order. The workplan shall be reviewed and updated as necessary in order to remain current and applicable to the discharge and discharge facilities.
 - (2) The TRE shall be initiated within 30 days of the date of completion of the accelerated monitoring test observed to exceed either evaluation parameter.
 - (3) The TRE shall be conducted in accordance with an approved work plan.
 - (4) The TRE needs to be specific to the discharge and Discharger facility, and be in accordance with current technical guidance and reference materials including USEPA guidance materials. TRE shall be conducted as a tiered evaluation process, such as summarized below:
 - (a) Tier 1 consists of basic data collection (routine and accelerated monitoring).
 - (b) Tier 2 consists of evaluation of optimization of the treatment process including operation practices, and in-plant process chemicals.
 - (c) Tier 3 consists of a toxicity identification evaluation (TIE).
 - (d) Tier 4 consists of evaluation of options for additional effluent treatment processes.
 - (e) Tier 5 consists of evaluation of options for modifications of in-plant treatment processes.
 - (f) Tier 6 consists of implementation of selected toxicity control measures, and follow-up monitoring and confirmation of implementation success.
 - (5) The TRE may be ended at any stage if monitoring finds there is no longer consistent toxicity.
 - (6) The objective of the TIE shall be to identify the substance or combination of substances causing the observed toxicity. All reasonable efforts using currently available TIE methodologies shall be employed.
 - (7) As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the source(s) and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with chronic toxicity evaluation parameters.

- (8) Many recommended TRE elements parallel required or recommended efforts of source control, pollution prevention and storm water control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements or recommended efforts of such programs may be acceptable to comply with TRE requirements.
 - (9) The Board recognizes that chronic toxicity may be episodic and identification of causes of and reduction of sources of chronic toxicity may not be successful in all cases. Consideration of enforcement action by the Board will be based in part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.
- g. Chronic Toxicity Monitoring Screening Phase Requirements, Critical Life Stage Toxicity Tests and definitions of terms used in the chronic toxicity monitoring are identified in Attachment C of the SMP. The Discharger shall comply with these requirements as applicable to the discharge.
 - h. Board staff are in the process of evaluating data from previous ETCP chronic toxicity testing, and may revise the above chronic toxicity requirements based on the results of this evaluation.

7. Effluent Characterization for Selected Constituents

The Discharger shall monitor and evaluate effluent discharged to lower San Francisco Bay for the constituents listed in Enclosure A of the Regional Board's August 6, 2001 Letter. Compliance with this requirement shall be achieved in accordance with the specifications stated in the Regional Board's August 6, 2001 Letter under Effluent Monitoring for major dischargers. The Discharger submitted a sampling plan in response to this letter, and the Executive Officer conditionally approved the plan in November 2001. Interim and final reports shall be submitted to the Regional Board in accordance with the schedule specified below (same schedule is also specified in August 6, 2001 Letter):

Interim and Final Reports: An interim report is due on May 18, 2003. The report should summarize the data collected to date, and describe future monitoring to take place. A final report that presents all the data shall be submitted to the Regional Board 180 days prior to the permit expiration date (September 30, 2007). This final report shall be submitted with the application for permit reissuance.

8. Ambient Background Receiving Water Study

The Discharger shall collect or participate in collecting background ambient receiving water data with other Dischargers and/or through the RMP. This information is required to perform RPAs and to calculate effluent limitations. To fulfill this requirement, the Discharger shall submit data sufficient to characterize the concentration of each toxic pollutant listed in the CTR in the ambient receiving water. The data on the conventional water quality parameters (pH, salinity, and hardness) shall also be sufficient to characterize these parameters in the ambient receiving water at a point after the discharge has mixed with the receiving waters.

The sampling frequency and sampling station locations shall be specified in the sampling plan. The frequency of monitoring shall consider seasonal variability of the receiving water. It would be acceptable to select stations representative of incoming ocean waters because the combined effluent discharges to the Bay through deep water diffusers.

The Bay Area Clean Water Agencies, on behalf of the Discharger, submitted a sampling plan dated September 28, 2001, for a collaborative group monitoring program. The Executive Officer conditionally approved this plan in November 2001.

Interim and Final Reports: The Discharger shall submit an interim report on May 18, 2003. The report shall summarize the data collected to date, and describe future monitoring to take place. The Discharger shall submit a final report that presents all the data to the Board 180 days prior to permit expiration. This final report shall be submitted with the application for permit reissuance.

Ongoing Programs

9. Regional Monitoring Program

The Discharger shall continue to participate in the Regional Monitoring Program (RMP) for trace substances in San Francisco Bay in lieu of more extensive effluent and receiving water self-monitoring requirements that may be imposed.

10. Pretreatment Program

Pretreatment Program: The Discharger shall implement and enforce its approved pretreatment program in accordance with Federal Pretreatment Regulations (40 CFR 403), pretreatment standards promulgated under Section 307(b), 307(c), and 307(d) of the Clean Water Act, and the requirements in **Attachment F**, "Pretreatment Requirements." The Discharger's responsibilities include, but are not limited to:

- a. Enforcement of National Pretreatment Standards in accordance with 40 CFR 403.5 and 403.6;
- b. Implementation of its pretreatment program in accordance with legal authorities, policies, procedures and financial provisions described in the General Pretreatment regulations (40 CFR 403) and the Discharger's approved pretreatment program including following the sampling schedule outlined in Table 3 of the SMP;
- c. Submission of reports to , the State Board and the Board, as described in **Attachment F**, "Pretreatment Requirements;"

The Discharger shall implement its approved pretreatment program and the program shall be an enforceable condition of this permit. If the Discharger fails to perform the pretreatment functions, the RWQCB, the State Waters Resources Control Board (SWRCB), or USEPA may take enforcement actions against the Discharger as authorized by the Clean Water Act.

Optional Studies

11. Copper Translator Study and Schedule

In order to develop information that may be used to establish a water quality-based effluent limit based on dissolved copper criteria, the Discharger may utilize RMP data from stations nearest to the Discharger's outfall. A copper translator will be calculated as part of the technical work being conducted for the North of Dumbarton copper/nickel TMDL/SSO project. Optionally, the Discharger may implement a sampling plan to collect data for development of a dissolved to total copper translator. If the Discharger chooses to proceed with the study, which may be conducted in cooperation with other dischargers, the work shall be performed in accordance with the following tasks:

Task

a. Copper Translator Study Plan.

The Discharger shall submit a study plan, acceptable to the Executive Officer, for collection of data that can be used for establishment of a dissolved to total copper translator, as discussed in the Findings.

b. After Executive Officer approval, the Discharger shall begin implementation of the study plan. The study plan shall provide for development of translators in accordance with the State Board's SIP, USEPA guidelines, California Department of Fish and Game approval, and any relevant portions of the Basin Plan, as amended.

c. Copper Translator Final Report.

The Discharger shall conduct the translator study by using field sampling data approximate to the discharge point and in the vicinity of the discharge point, or as otherwise provided for in the approved workplan, and shall submit a report, acceptable to the Executive Officer, no later than March 31, 2005, documenting the results of the copper translator study. The study may be conducted in coordination with other dischargers and may also include any other site specific information that the Discharger would like the Board to consider in development of a water quality-based effluent limitation for copper.

Facilities Status Reports and Permit Administration**12. Wastewater Facilities, Review and Evaluation, and Status Reports.**

- a. The Discharger shall operate and maintain its wastewater collection, treatment and disposal facilities in a manner to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary, in order to provide adequate and reliable transport, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the Discharger's service responsibilities.
- b. The Discharger shall regularly review and evaluate its wastewater facilities and operation practices in accordance with section a. above. Reviews and evaluations shall be conducted as an ongoing component of the Discharger's administration of its wastewater facilities.
- c. Annually, the Discharger shall submit to the Board a report describing the current status of its wastewater facility review and evaluation, including any recommended or planned actions and an estimated time schedule for these actions. This report shall include a description or summary of review and evaluation procedures, and applicable wastewater facility programs or capital improvement projects. This report shall be submitted in accordance with the Annual Status Report Provision below.

13. Operations and Maintenance Manual, Review and Status Reports

- a. The Discharger shall maintain an Operations and Maintenance Manual (O & M Manual) as described in the findings of this Order for the Discharger's wastewater facilities. The O & M Manual shall be maintained in useable condition, and available for reference and use by all applicable personnel.
- b. The Discharger shall regularly review, and revise or update as necessary, the O & M Manual(s) in order for the document(s) to remain useful and relevant to current equipment and operation

practices. Reviews shall be conducted annually, and revisions or updates shall be completed as necessary. For any significant changes in treatment facility equipment or operation practices, applicable revisions shall be completed within 90 days of completion of such changes.

- c. Annually, the Discharger shall submit to the Board a report describing the current status of its O & M Manual review and updating. This report shall include an estimated time schedule for completion of any revisions determined necessary, a description of any completed revisions, or a statement that no revisions are needed. This report shall be submitted in accordance with the Annual Status Report Provision below.

14. Contingency Plan, Review and Status Reports.

- a. The Discharger shall maintain a Contingency Plan as required by Board Resolution 74-10 (attached), and as prudent in accordance with current municipal facility emergency planning. The discharge of pollutants in violation of this Order where the Discharger has failed to develop and/or adequately implement a contingency plan will be the basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.
- b. The Discharger shall regularly review, and update as necessary, the Contingency Plan in order for the plan to remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and updates shall be completed as necessary.
- c. Annually, the Discharger shall submit to the Board a report describing the current status of its Contingency Plan review and update. This report shall include a description or copy of any completed revisions, or a statement that no changes are needed. This report shall be submitted in accordance with the Annual Status Report Provision below.

15. Annual Status Reports

The reports identified above in Provisions **E.12.c**, **E.13.c.**, and **E.14.c.** shall be submitted to the Board annually, by June 30 of each year. Modification of report submittal dates may be authorized, in writing, by the Executive Officer.

16. 303(d)-listed Pollutants Site-Specific Objective and TMDL Status Review

The Discharger shall participate in the development of TMDLs or SSOs for copper, mercury, selenium, 4,4'-DDE, Dieldrin, and PCBs. By January 31 of each year, the Discharger shall submit an update to the Board to document efforts made on participation in development of TMDLs or SSOs. Regional Board staff shall review the status of TMDL development. This Order may be reopened in the future to reflect any changes required by TMDL development.

17. New Water Quality Objectives

As new or revised WQOs come into effect for the Bay and contiguous water bodies (whether statewide, regional or site-specific), effluent limitations in this Order will be modified as necessary to reflect updated WQOs. Adoption of effluent limitations contained in this Order are not intended to restrict in any way future modifications based on legally adopted WQOs.

18. Self-Monitoring Program

The Discharger shall comply with the SMP for this Order as adopted by the Board. The SMPs may be amended by the Executive Officer pursuant to USEPA regulation 40 CFR 122.62, 122.63, and 124.5.

19. Standard Provisions and Reporting Requirements

The Discharger shall comply with all applicable items of the *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993* (attached), or any amendments thereafter. Where provisions or reporting requirements specified in this Order are different from equivalent or related provisions or reporting requirements given in 'Standard Provisions', the specifications of this Order shall apply.

20. Change in Control or Ownership.

- a. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Board.
- b. To assume responsibility of and operations under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order (see *Standard Provisions & Reporting Requirements*, August 1993, Section E.4.). Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code.

21. Permit Reopener

The Board may modify or reopen this Order and Permit prior to its expiration date in any of the following circumstances:

- (1) If present or future investigations demonstrate that the discharge(s) governed by this Order and Permit will or have a reasonable potential to cause or contribute to adverse impacts on water quality and/or beneficial uses of the receiving waters;
- (2) New or revised WQOs come into effect for the San Francisco Bay estuary and contiguous water bodies (whether statewide, regional, or site-specific). In such cases, effluent limitations in this permit will be modified as necessary to reflect updated WQOs. Adoption of effluent limitations contained in this Order and Permit is not intended to restrict in any way future modifications based on legally adopted WQOs or as otherwise permitted under Federal regulations governing NPDES permit modifications;
- (3) If translator or other water quality studies provide a basis for determining that a permit condition(s) should be modified.

The Discharger may request permit modification based on (2) and (3) above. The Discharger shall include in any such request an antidegradation and antibacksliding analysis.

22. NPDES Permit

This Order shall serve as a National Pollutant Discharge Elimination System (NPDES) permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective April 1, 2003, provided the USEPA Regional Administrator has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

23. Order Expiration and Reapplication

- a. This Order expires on March 31, 2008.
- b. In accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code, the Discharger must file a report of waste discharge no later than 180 days before the expiration date of this Order as application for reissue of this permit and waste discharge requirements.

I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on January 22, 2003.



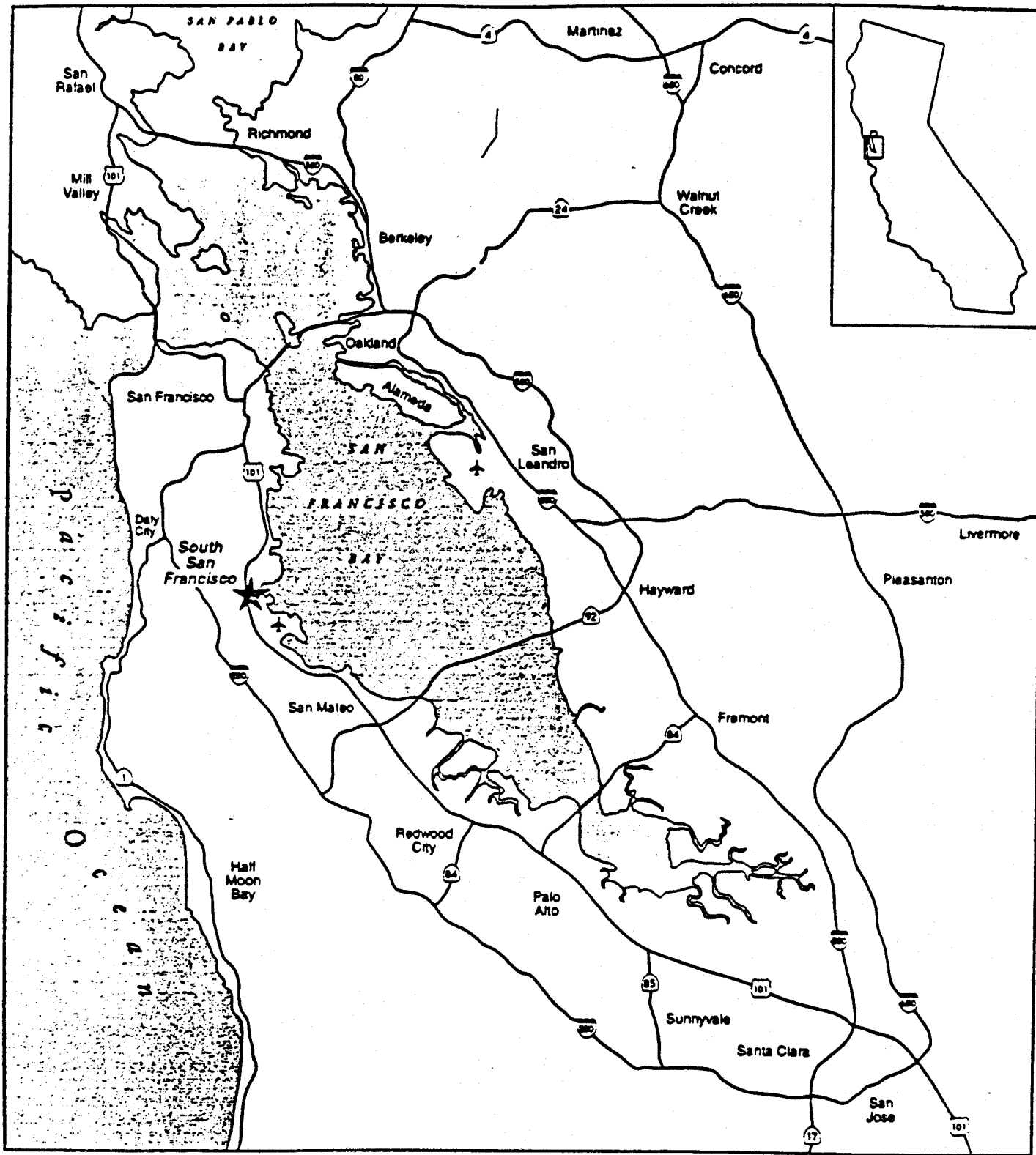
LORETTA K. BARSAMIAN

Executive Officer

Attachments:

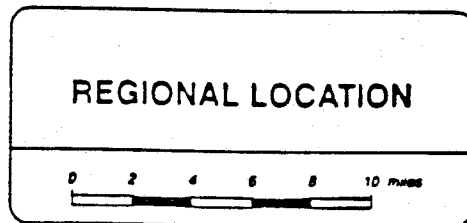
- A. Discharge Facility Location Map
- B. Discharge Facility Treatment Process Diagram
- C. Self-Monitoring Program (Part A available online)
- D. Standard Provisions and Reporting Requirements, August 1993 (available online)
- E. Fact Sheet
- F. Pretreatment Provisions

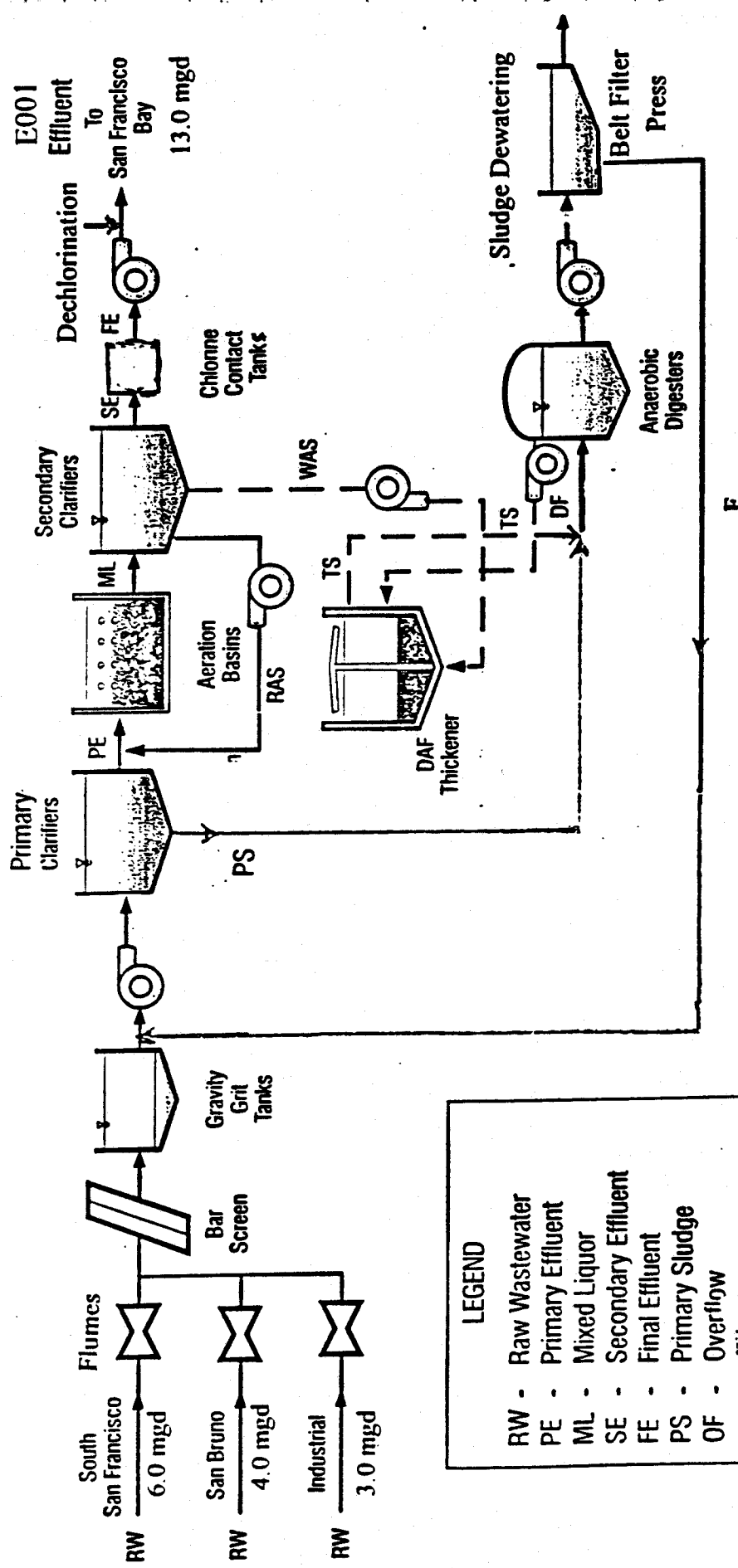
Blue Ox draft 1 (15 September 1997)



**ATTACHMENT A
DISCHARGE FACILITY
LOCATION MAP**

**S.S.F. WATER QUALITY CONTROL PLANT
IMPROVEMENT PROGRAM**





LEGEND	
RW -	Raw Wastewater
PE -	Primary Effluent
ML -	Mixed Liquor
SE -	Secondary Effluent
FE -	Final Effluent
PS -	Primary Sludge
OF -	Overflow
F -	Filtrate
TS -	Thickened Sludge
WAS -	Waste Activated Sludge
RAS -	Return Activated Sludge
DF -	Digester Foam
—	Liquid Stream
- -	Solids Stream

ATTACHMENT B
PROCESS FLOW DIAGRAM
SSF/SB WASTEWATER TREATMENT FACILITY

Attachment C

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

SELF-MONITORING PROGRAM

FOR

**CITIES OF SOUTH SAN FRANCISCO AND SAN BRUNO
WATER QUALITY CONTROL PLANT
NORTH BAYSIDE SYSTEM UNIT**

SAN MATEO COUNTY

NPDES PERMIT NO. CA0038130

ORDER NO. R2-2003 - 0010

Consists of:

Part A (not attached)

Adopted August 1993

And

Part B (Attached)

Adopted:

CONTENTS:

- I. DESCRIPTION of SAMPLING and OBSERVATION STATIONS**
- II. SCHEDULE of SAMPLING, ANALYSES and OBSERVATIONS (Table 1)**
- III. SPECIFICATIONS for SAMPLING, ANALYSES and OBSERVATIONS**
- IV. SELECTED CONSTITUENTS MONITORING (Table 2)**
- VI. REPORTING REQUIREMENTS**
- VII. SELECTED CONSTITUENTS MONITORING**
- VIII. MONITORING METHODS AND MINIMUM DETECTION LEVELS**
- VIII. SELF-MONITORING PROGRAM CERTIFICATION**

I. DESCRIPTION of SAMPLING and OBSERVATION STATIONS

NOTE: A sketch showing the locations of all sampling and observation stations shall be included in the Annual Report, and in the monthly report if stations change.

<u>Station</u>	<u>Description</u>
A. <u>INFLUENT</u>	

A-001	At any point in the treatment facilities upstream of the flocculation tank at which all waste tributary to the treatment system is present, and preceding any phase of treatment.
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B. EFFLUENT

E-001	Before Dechlorination At any point in the plant after disinfection between the point of discharge into the combined forcemain-outfall and the point at which all waste from the treatment plant is present.
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E-002	Dechlorinated Effluent At any point in the North Bayside System (NBSU) combined outfall after dechlorination between the point of discharge into San Francisco Bay and the point at which all waste tributary to the NBSU combined outfall is present.
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C. OVERFLOWS and BYPASSES

OV-'n'	Bypass or overflows from manholes, pump stations, portions of the collection system under the Discharger's control.
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D. TREATMENT PLANT PERIMETER (Land Observations)

P-1 to P='n'	Points located along the perimeter of the wastewater treatment facility, at equidistant intervals of about 500 feet.
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II. SCHEDULE of SAMPLING, ANALYSES and OBSERVATIONS OF IWTP INFLUENT, EFFLUENT, AND STORM WATER OUTFALLS

The schedule of sampling, analysis and observation shall be that given in Table 1 below.

TABLE 1 - SCHEDULE of SAMPLING, ANALYSES and OBSERVATIONS [1], [13]

Sampling Station:			A-001	E-001			E-002
			Influent	Effluent to NBSU Joint Force Main			Effl. To Lower Bay (NBSU Outfall)
Type of Sample:			C-24	G [2]	C-24	Cont	
Parameter	Units	Notes	[1]				
Flow Rate	MGD	[3]	Cont			Cont	Cont
BOD ₅ 20°C	mg/L & kg/day	[4]	3/W		3/W		
TSS	mg/L & kg/day	[4]	5/W		5/W		
Oil & Grease	mg/L & kg/day	[5]		M			
Settleable Matter	ml/l-hr			M			
Fecal Coliform	MPN/100 ml			3/W			
Chlorine Residual and Dosage	mg/L & kg/day	[6]		Cont/H			Cont/H
Ammonia Nitrogen & Unionized Ammonia	mg/L & kg/day				M		
pH	pH units			D [7]			
Temperature	°C			D [7]			
Dissolved Oxygen	mg/L and %Saturation			D [7]			
Acute Toxicity	% Survival	[8]			M		
Chronic Toxicity		[9]			2/Y		
Copper	µg/L				M		
Mercury	µg/L & kg/mo	[10]		M			
Nickel	µg/L				M		
Selenium	µg/L				M		
Silver	µg/L				M		
Zinc	µg/L				M		
Cyanide	µg/L	[11]					M (grab)
Tributyltin	µg/L			2/Y			
4,4'-DDE	µg/L			2/Y			
Dieldrin	µg/L			2/Y			
Tetrachloroethylene	µg/L			2/Y			
2,3,7,8-TCDD and Congeners	pg/L	[12]		2/Y			
All Applicable Standard Observations				D			D

Sampling Station:			A-001	E-001			E-002
			Influent	Effluent to NBSU Joint Force Main			Effl. To Lower Bay (NBSU Outfall)
Type of Sample:			C-24	G [2]	C-24	Cont	
Pretreatment Requirements (Table 3)	µg/L or ppb	[13]					

LEGEND FOR TABLE 1Sampling Stations:

- A = treatment facility influent
 E = treatment facility effluent
 OV = overflow and bypass points
 P = treatment facility perimeter points

Types of Samples:

- C-24 = composite sample, 24 hours (includes continuous sampling, such as for flows)
 C-X = composite sample, X hours
 G = grab sample
 O = observation

Frequency of Sampling:

- Cont. = continuous
 Cont/D = continuous monitoring & daily reporting
 D = once each day
 E = each occurrence
 H = once each hour (at hourly intervals)
 M = once each month
 W = once each week
 Y = once each calendar year
 2/Y = twice each calendar year (at about 6 months intervals)
 3/W = three times each calendar week (on separate days)
 5/W = five times each calendar week (on separate days)
 Q = once each calendar quarter

Parameter and Unit Abbreviations:

- BOD₅ 20°C = Biochemical Oxygen Demand, 5-day, at 20°C
 D.O. = Dissolved Oxygen
 PAHs = Polynuclear Aromatic Hydrocarbons
 TSS = Total Suspended Solids
 Est V = Estimated Volume (gallons)
 mgd = million gallons per day
 mg/L = milligrams per liter
 ml/L-hr = milliliters per liter, per hour
 µg/L = micrograms per liter
 kg/d = kilograms per day
 kg/mo = kilograms per month
 MPN/100 ml = Most Probable Number per 100 milliliters

FOOTNOTES FOR TABLE 1

- [1] Additional details regarding sampling, analyses and observations are given in Section VI of this SMP, *Specifications for Sampling, Analyses and Observations* (SMP Section VI).
- [2] Grab samples shall be taken on day(s) of composite sampling.
- [3] Flow Monitoring.
Flow monitoring indicated as continuous monitoring in Table 1 shall be conducted by continuous measurement of flows, and reporting of the following measurements:
Influent (A-001), and Effluent (E-001):

- a. Daily:
 - (1) Average Daily Flow (mgd)
 - (2) Maximum Daily Flow (mgd)
 - (3) Minimum Daily Flow (mgd).
 - b. Monthly: The same values as given in a. above, for the calendar month.
- [4] The percent removal for BOD and TSS shall be reported for each calendar month, in accordance with Effluent Limitation B.3
- [5] Oil & Grease Monitoring.
Each Oil & Grease sample event shall consist of a composite sample comprised of three grab samples taken at equal intervals during the calendar date, with each grab sample being collected in a glass container. The grab samples shall be mixed in proportion to the instantaneous flow rates occurring at the time of each grab sample, within an accuracy of plus or minus 5 %. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent rinsing as soon as possible after use, and the solvent rinsing shall be added to the composite sample for extraction and analysis.
- [6] Disinfection Process Monitoring.. During all times when chlorination is used for disinfection of the effluent, effluent chlorine residual concentrations shall be monitored continuously, with reporting every hour on the hour, or by grab samples taken every hour **at Outfall E002**, for a total of 24 chlorine residual readings a day. Grab samples may be taken by hand or by automated means using in-line equipment such as three-way valves and chlorine residual analyzers. Chlorine residual concentrations shall be monitored and reported for sampling points both prior to and following dechlorination. Chlorine dosage (kg/day) shall be recorded on a daily basis and dechlorination chemical dosage and/or residual (if desired to demonstrate chlorine exceedances are false positives).
- [7] Dissolved oxygen, temperature, and pH shall also be analyzed on the same sample(s) used for the bioassay(s) prior to starting the flow-through bioassay(s) and at intervals of 24, 48, 72, and 96 hours after starting the flow-through bioassay(s).
- [8] Acute Toxicity Monitoring (Flow-through bioassay tests).
- Compliance with the effluent limitation for acute toxicity shall be determined using two species in parallel flow-through bioassays. One species shall be three-spine stickleback, and the other shall be fathead minnow. The sample may be taken from E-001 prior to disinfection instead of continuously dechlorinated E-001 effluent. Compliance with the toxicity limitation may be demonstrated after adjusting the effluent pH through the addition of concentrated sulfuric acid to minimize the concentration of un-ionized ammonia.
- The following parameters shall be monitored on the sample stream used for the acute toxicity bioassays, at the start of the bioassay test and daily for the duration of the bioassay test, and the results reported: flow rate, water hardness, alkalinity, pH, temperature, dissolved oxygen, and ammonia nitrogen. If the fish survival rate in the effluent is less than 70% or the control fish survival rate is less than 90%, bioassay test shall be restarted with new batches of fish and continue back to back until compliance is demonstrated.
- [9] Chronic Toxicity Monitoring: See **also**, Provision E.6. and Attachment A of this SMP.
1. *Chronic Toxicity Monitoring Requirements*

- a. Sampling: The Discharger shall collect 24-hour composite samples of treatment plant effluent at Sampling Station E-001, for critical life stage toxicity testing as indicated below. For toxicity tests requiring renewals, 24-hour composite samples collected on consecutive days are required.
- b. Test Species: Chronic toxicity shall be monitored by using critical life stage test(s) and the most sensitive test specie(s) identified by screening phase testing or previous testing conducted under the ETCP. Test specie(s) shall be approved by the Executive Officer. Two test species may be required if test data indicate that there is alternating sensitivity between the two species.
- c. Frequency:
 - (1) Routine Monitoring: Twice per year
 - (2) Accelerated Monitoring: Quarterly, or as otherwise specified by the Executive Officer.
- d. Conditions for Accelerated Monitoring: The Discharger shall conduct accelerated monitoring when either of the following conditions are exceeded:
 - (1) Three sample median value of 10 TUc, or
 - (2) Single sample maximum value of 20 TUc.
- e. Methodology: Sample collection, handling and preservation shall be in accordance with USEPA protocols. The test methodology used shall be in accordance with the references cited in this Permit, or as approved by the Executive Officer. A concurrent reference toxicant test shall be performed for each test.
- f. Dilution Series: The Discharger shall conduct tests at 2%, 5%, 10%, 20%, and 40%. The "%" represents percent effluent as discharged.

2. *Chronic Toxicity Reporting Requirements*

- a. Routine Reporting: Toxicity test results for the current reporting period shall include, at a minimum, for each test:
 1. Sample date(s)
 2. Test initiation date
 3. Test species
 4. End point values for each dilution (e.g. number of young, growth rate, percent survival)
 5. NOEC value(s) in percent effluent
 6. IC₁₅, IC₂₅, IC₄₀, and IC₅₀ values (or EC₁₅, EC₂₅ ... etc.) in percent effluent
 7. TUc values (100/NOEC, 100/IC₂₅, and 100/EC₂₅)
 8. Mean percent mortality (\pm s.d.) after 96 hours in 100% effluent (if applicable)
 9. NOEC and LOEC values for reference toxicant test(s)
 10. IC₅₀ or EC₅₀ value(s) for reference toxicant test(s)
 11. Available water quality measurements for each test (e.g., pH, D.O., temperature, conductivity, hardness, salinity, ammonia)
- b. Compliance Summary: The results of the chronic toxicity testing shall be provided in the most recent self-monitoring report and shall include a summary table of chronic toxicity data

from at least eleven of the most recent samples. The information in the table shall include the items listed above under Section [10].a, item numbers 1, 3, 5, 6(IC₂₅ or EC₂₅), 7, and 8.

- [10] Use ultra-clean sampling (EPA 1669) to the maximum extent practicable, and ultra-clean analytical methods (EPA 1631) for mercury monitoring. The Discharger may use alternative methods of analysis (such as USEPA 245), if that alternate method has a Minimum Level of 2 ng/L or less.
- [11] Compliance with the Effluent Limit B.7.g. will be determined by using the E-002 sample. Other NBSU members sample cyanide from their individual effluent stations, before joining the combined outfall. The Discharger will be solely responsible for all violations of this cyanide limit at E-002. The Discharger may, at their option, analyze for cyanide as Weak Acid Dissociable Cyanide using protocols specified in Standard Method Part 4500-CN-I, USEPA Method OI 1677, or equivalent alternatives in latest edition. Alternative methods of analysis must be approved by the Executive Officer.
- [12] Chlorinated Dibenzodioxins and Chlorinated Dibenzofurans shall be analyzed using the latest version of USEPA Method 1613; the method shall be capable of detecting concentrations on the order of picogram per liter or lower. Major dischargers are required to monitor the effluent once during the dry season and once during the wet season for a period of three consecutive years. Alternative methods of analysis must be approved by the Executive Officer.
- [13] Pretreatment Program Requirements: see Table 3 below.

Table 2: Selected Constituents Monitoring – Minimum Levels for Toxic Pollutants

CTR #	Constituent (a)	Minimum Level (µg/L) (b)											
		GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
6.	Copper (c)					25	5	10	0.5	2			1000
8.	Mercury (d)								0.5			0.2	
9.	Nickel					50	5	20	1	5			1000
10.	Selenium						5	10	2	5	1		1000
11.	Silver					10	1	10	0.25	2			1000
13.	Zinc					20		20	1	10			
14.	Cyanide				5								
38.	Tetrachloroethylene	0.5	2										
109.	4,4'-DDE	0.05											
111.	Dieldrin	0.01											
	Tributyltin (e)	0.5	2										
16.	2,3,7,8-TCDD (e)												

Notes:

- a.) According to the SIP, method-specific factors (MSFs) can be applied. In such cases, this additional factor must be applied in the computation of the reporting limit. Application of such factors will alter the reported ML (as described in section 2.4.1) Dischargers are to instruct laboratories to establish calibration standards so that the ML value is the lowest calibration standard. At no time is the discharger to use analytical data derived from the extrapolation beyond the lowest point of the calibration curve.
- b.) Laboratory techniques are defined as follows: GC = Gas Chromatography; GCMS = Gas Chromatography/Mass Spectrometry; LC = High Pressure Liquid Chromatography; Color = Colorimetric;

FAA = Flame Atomic Absorption; GFAA = Graphite Furnace Atomic Absorption; Hydride = Gaseous Hydride Atomic Absorption; CVAA = Cold Vapor Atomic Absorption; ICP = Inductively Coupled Plasma; ICPMS = Inductively Coupled Plasma/Mass Spectrometry; SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption (i.e. USEPA 200.9); DCP = Direct Current Plasma.

- c.) For copper, the discharger may also use the following laboratory techniques with the relevant minimum level: GFAA with a minimum level of 5 µg/L and SPGFAA with a minimum level of 2 µg/L.
- d.) Use ultra-clean sampling and analytical methods for mercury monitoring per 13267 letter issued to Discharger. ML for compliance purposes is as listed in table above until the SWRCB adopts alternative minimum level. (see 2000 SIP Appendix 4)
- e.) The Discharger should continue using the same analytical procedures to achieve the method detection limit of 0.002 µg/L. Board staff is working with the Discharger (through BACWA), to determine a minimum level for compliance determination.

Table 3. Pretreatment Monitoring Requirements

Constituents / USEPA Method	Influent	Effluent	Sludge
VOC / 624	2/Y	2/Y	
BNA / 625	2/Y	2/Y	
Metals [1]	M	M	
O-Pest / 614	N/A	N/A	
C-Pest / 632	N/A	N/A	
Sludge [2]			2/Y

LEGEND FOR TABLE 3

M = once each calendar month

Q = once each calendar quarter (at about three month intervals)

2/Y = twice each calendar year (at about 6 month intervals, once in the dry season, once in the wet season)

VOC = volatile organic compounds

BNA = base/neutrals and acids extractable organic compounds

O-Pest = organophosphorus pesticides

C-Pest = carbamate and urea pesticides

FOOTNOTES FOR TABLE 3

[1] Same USEPA method used to determine compliance with the respective NPDES permit. The parameters are arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, zinc, selenium and cyanide.

[2] USEPA approved methods.

III. Specifications For Sampling, Analyses And Observations

Sampling, analyses and observations, and recording and reporting of results shall be conducted in accordance with the schedule given in Table 1 of this SMP, and in accordance with the following specifications, as well as all other applicable requirements given in this SMP. All analyses shall be conducted using analytical methods that are commercially and reasonably available, and that provide quantification of sampling parameters and constituents sufficient to evaluate compliance with applicable effluent limits.

A. Influent Monitoring.

Influent monitoring identified in Table 1 of this SMP is the minimum required monitoring. Additional sampling and analyses may be required in accordance with Pretreatment Program or Pollution Prevention/Source Control Program requirements.

B. Effluent Monitoring.

Composite samples of effluent shall be collected on varying days selected at random coincident with influent composite sampling unless otherwise stipulated. The Executive Officer may approve an alternative sampling plan if it is demonstrated to the Executive Officer's satisfaction that expected operating conditions for the facility warrant a deviation from the standard sampling plan.

Grab samples of effluent shall be collected during periods of maximum peak flows and shall coincide with effluent composite sample days.

Fish bioassay samples shall be collected on days coincident with effluent composite sampling.

Bioassay tests should be performed on effluent samples after chlorination-dechlorination.

Total ammonia nitrogen shall be analyzed and un-ionized ammonia calculated whenever fish bioassay test results fail to meet the specified percent survival.

If two consecutive samples within a 30 day period of a weekly or monthly monitored constituent exceed the monthly average effluent limit for any parameter, (or if the required sampling frequency is once per month and the monthly sample exceeds the monthly average limit), the sampling frequency shall be increased to daily until the additional sampling shows that the most recent 30-day moving average is in compliance with the monthly average limit.

If any maximum daily limit is exceeded, the sampling frequency shall be increased to daily until two samples collected on consecutive days show compliance with the maximum daily limit.

If the final or intermediate results of any single bioassay test indicate a threatened violation (i.e. the percentage of surviving test organisms is less than the required survival percentage), a new test will begin and the discharger shall investigate the cause of the mortalities and report the finding in the next self-monitoring report.

Chlorine residual analyzers shall be calibrated against grab samples as frequently as necessary to maintain accurate control and reliable operation. If an effluent violation is detected, grab samples shall be collected at least every 30 minutes until compliance is achieved.

IV. Reporting Requirements

A. General Reporting Requirements are described in Section E of the Regional Board's "*Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits*", dated August 1993.

B. Modifications to Self-Monitoring Program, Part A:

1. If any discrepancies exist between Part A and Part B of the SMP, Part B prevails.
2. The following sections of Part A: C.3., C.4., C.5. are satisfied by participation in the Regional Monitoring Program.
3. The following sections of Part A: D.4., and E.3, are exclusions to the Self-Monitoring Program.

4. Section C.2.a of Part A, shall be modified as follows:

If additional influent or effluent sampling beyond that required in Table 1 of Part B is done voluntarily or to fulfill any requirements in this permit other than those specified in Table 1 or Part B, corresponding collection of effluent or influent samples is not required by this section. The Executive Officer may approve an alternative sampling plan if it is demonstrated to be representative of plant discharge flow and in compliance with all other requirements of this permit.

5. Section C.2.b of Part A shall be modified as follows:

Grab samples of effluent shall be collected during periods of maximum peak flows at a frequency specified in Table 1 of Part B, shall coincide with effluent composite sample days, and shall be analyzed for the constituents specified in Table 1.

6. Section C.2.c of Part A shall be modified as follows (C.2.c(1) and (2) are unchanged):

Effluent sampling will occur on at least one day of any multiple-day flow-through bioassay test required by Table 1 in Part B.

7. Section C.2.d. of Part A shall be modified as follows:

- d. If two consecutive samples of a constituent monitored on a weekly or monthly basis in a 30 day period exceed the monthly average effluent limit for any parameter, (or if the required sampling frequency is once per month and the monthly sample exceeds the monthly average limit), the sampling frequency shall be repeated once within 24 hours after results are received that indicate an exceedance of the monthly average effluent limit for that parameter. Repeat sampling shall occur in this way until the additional sampling shows two consecutive samples are in compliance with the monthly average limit

8. Section C.2.h of Part A shall be amended as follows:

- h. When any type of bypass occurs (except for bypasses caused by high wet weather inflow), composite samples shall be collected on a daily basis for all constituents at all affected discharge points which have effluent limits for the duration of the bypass.

When bypassing occurs from any treatment process (primary, secondary, chlorination, dechlorination, etc.) in the treatment facilities during high wet weather inflow, the self-monitoring program shall include the following sampling and analyses:

- i. When bypassing occurs from any primary or secondary treatment unit(s), composite samples for the duration of the bypass event for BOD and TSS analyses, and continuous monitoring of flow. If BOD or TSS, exceed the effluent limits, the bypass monitoring shall be expanded to include all constituents that have effluent limits for the duration of the bypass, until the BOD and TSS values stabilize to compliance with effluent limitations.
- ii. When bypassing the chlorination process, grab samples at least daily for Fecal Coliform analyses; and continuous monitoring of flow.

- iii. When bypassing the dechlorination process, grab samples hourly for chlorine residual; and continuous monitoring of flow.

9. Section D.1 of Part A, insert the following:

The requirements of this section only apply when receiving water standard observations are specified in table 1 of Part B. Receiving water standard observations are not specified in Table 1 of Part B of this permit. Therefore, the requirements of this section do not apply.

10. Section D.3 of Part A, insert the following:

The requirements of this section only apply when beach and shoreline standard observations are specified in Table 1 of Part B. Beach and shoreline standard observations are not specified in Table 1 of Part B of this permit. Therefore, the requirements of this section do not apply.

11. Section D.5 of Part A, insert the following:

The requirements of this section only apply when facility periphery standard observations are specified in Table 1 of Part B. Facility periphery standard observations are not specified in Table 1 of Part B of this permit. Therefore, the requirements of this section do not apply.

12. Section G. of Part A, Definition of Terms, amend as follows:

- a. *Grab Sample.* A grab sample is defined as an individual sample collected in a short period of time not exceeding fifteen minutes. A grab sample represents only the conditions that exist at the time the sample is collected. Grab samples shall be collected during normal peak loading conditions for the parameter of interest, which may not necessarily correspond with periods of peak hydraulic conditions. Grab samples are used primarily in determining compliance with daily and instantaneous maximum or minimum limits.
- b. *Composite Sample.* A composite sample is defined as a sample composed of individual grab samples collected manually or by an autosampling device on the basis of time and/or flow as specified in Table 1 of Part B. For flow-based compositing, the proportion of each grab sample included in the composite sample shall be within plus or minus five percent from the representative flow rate of the waste stream being sampled measured at the time of grab sample collection. Alternately, equal volume grab samples may be individually analyzed and the flow-weighted average calculated by averaging flow-weighted ratios of each grab sample analytical result. Grab samples forming time-based composite samples shall be collected at intervals not greater than those specified in Table 1 of Part B. The quantity of each grab sample forming a time-based composite sample shall be a set or flow proportional volume as specified in Table 1 of Part B. For Oil and Grease a minimum of four grab samples, one every six hours over a 24-hour period shall be used. If a particular time or flow-based composite sampling protocol is not specified in Table 1 of Part B, the discharger shall determine and implement the most representative sampling protocol for the given parameter subject to approval by the Executive Officer.
- c. *Average.* Average values for daily and monthly values are obtained by taking the sum of all daily values divided by the number of all daily values measured during the specified period. In calculating the monthly average, when there is more than one value for a given day, all the values for that day shall be averaged and the average value used as the daily value for that day.

C. Monthly Self-Monitoring Report (SMR).

For each calendar month, a self-monitoring report (SMR) shall be submitted to the Regional Board in accordance with the requirements listed below. The purpose of the report is to document treatment performance, effluent quality and compliance with waste discharge requirements prescribed by this Order, as demonstrated by the monitoring program data and the discharger's operation practices. The report shall be submitted to the Regional Board no later than **forty-five (45) days after the end of the reporting month.**

1. Letter of Transmittal

Each report shall be submitted with a letter of transmittal. This letter shall include the following:

- a. Identification of all violations of effluent limits or other discharge requirements found during the monitoring period;
- b. Details of the violations: parameters, magnitude, test results, frequency, and dates;
 - i. The cause of the violations;
 - ii. Discussion of corrective actions taken or planned to resolve violations and prevent recurrence, and dates or time schedule of action implementation. If previous reports have been submitted that address corrective actions, reference to such reports is satisfactory.
- c. The letter of transmittal shall be signed by the discharger's principal executive officer or ranking elected official, or duly authorized representative, and shall include the following certification statement:

" I certify under penalty of law that this document and all attachments have been prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

2. Compliance Evaluation Summary

Each report shall include a compliance evaluation summary. This summary shall include, for each parameter for which effluent limits are specified in the Permit, the number of samples taken during the monitoring period, and the number of samples in violation of applicable effluent limits.

3. Results of Analyses and Observations.

- i. Tabulations of all required analyses and observations, including parameter, sample date and time, sample station, and test result.
- ii. If any parameter is monitored more frequently than required by this permit and SMP, the results of this additional monitoring shall be included in the monitoring report, and the data shall be included in data calculations and compliance evaluations for the monitoring period.

- iii. Calculations for all effluent limits that require averaging of measurements shall utilize an arithmetic mean, unless specified otherwise in this permit or SMP.

4. Effluent Data Summary - U.S. EPA NPDES Discharge Monitoring Reports.

Summary tabulations of monitoring data including maximum, minimum and average values for subject monitoring period shall be reported in accordance with the format given by the U.S. EPA NPDES Discharge Monitoring Report(s) (DMRs; US EPA Form 3320-1 or successor). Copies of these DMRs shall be provided to U.S. EPA as required by U.S. EPA.

5. Results of Analyses and Observations.

- a. Tabulations of all required analyses and observations, including parameter, sample date and time, sample station, and test result.
- b. If any parameter specified in Table 1 of Part B is monitored more frequently than required by this permit and SMP, the results of this additional monitoring shall be included in the monitoring report, and the data shall be included in data calculations and compliance evaluations for the monitoring period.
- c. Calculations for all effluent limits that require averaging of measurements shall utilize an arithmetic mean, unless specified otherwise in this permit or SMP.

6. Data Reporting for Results Not Yet Available.

The discharger shall make all reasonable efforts to obtain analytical data for required parameter sampling in timely manner. The Regional Board recognizes that certain analyses require additional time in order to complete analytical processes and result reporting. For cases where required monitoring parameters require additional time to complete analytical processes and reporting, and results are not available in time to be included in the SMR for the subject monitoring period, such cases shall be described in the SMR. Data for these parameters, and relevant discussions of any observed violations, shall be included in the next following SMR.

7. Reporting Data in Electronic Format.

The discharger has the option to submit all monitoring results in an electronic reporting format approved by the Executive Officer. The discharger is currently submitting SMRs electronically in a format approved by the Executive Officer in a letter dated December 17, 1999, Official Implementation of Electronic Reporting System (ERS). The ERS format includes, but is not limited to, a transmittal letter, summary of violation details and corrective actions, and transmittal receipt. If there are any discrepancies between the ERS requirements and the "hard copy" requirements listed in the SMP, then the approved ERS requirements supercede.

D. Self-Monitoring Program Annual Report (Annual Report).

An Annual Report shall be submitted for each calendar year. The report shall be submitted to the Regional Board by **February 15 of the following year**. This report shall include the following:

- Both tabular and graphical summaries of monitoring data collected during the calendar year that characterizes treatment plant performance and compliance with waste discharge requirements.
- A comprehensive discussion of treatment plant performance and compliance with waste discharge requirements. This discussion should include any corrective actions taken or planned such as changes to facility equipment or operation practices which may be needed to achieve compliance, and any other actions taken or planned that are intended to improve performance and reliability of the discharger's wastewater collection, treatment or disposal practices.
- A plan view drawing or map showing the dischargers' facility, flow routing and sampling and observation station locations.

E. Spill Reports.

A report shall be made of any spill of oil or other hazardous material.

The spill shall be reported by telephone as soon as possible and no later than 24 hours following occurrence or discharger's knowledge of occurrence. Spills shall be reported by telephone as follows:

During weekdays, during office hours of 8 am to 5 pm, to Ray Balcom at the Regional Board:

Current telephone number: (510) 622 - 2312, (510) 622-2460 (FAX).

During non-office hours, to the State Office of Emergency Services:

Current telephone number: (800) 852 - 7550.

A written report shall be submitted to the Regional Board within five (5) working days following telephone notification, unless directed otherwise by Board staff. A report submitted by facsimile transmission is acceptable for this reporting. The written report shall include the following:

Date and time of spill, and duration if known.

Location of spill (street address or description of location).

Nature of material spilled.

Quantity of material involved.

Receiving water body affected.

Cause of spill.

Observed impacts to receiving waters (e.g., discoloration, oil sheen, fishkill).

Corrective actions that were taken to contain, minimize or cleanup the spill.

Future corrective actions planned to be taken in order to prevent recurrence, and time schedule of implementation.

Persons or agencies contacted.

F. Reports of Collection System Overflows.

Overflows of sewage from the discharger's collection system, other than overflows specifically addressed elsewhere in this Order and SMP, shall be reported to the Regional Board in accordance with the following:

1. *Overflows in excess of 1,000 gallons.*

- a. Overflows in excess of 1,000 gallons shall be reported by telephone and written report, as follows:
- b. Overflows shall be reported by telephone as soon as possible and no later than 24 hours following occurrence or discharger's knowledge of occurrence. Notification shall be made as follows:
- c. Notify the current Board staff inspector, or case handler, by phone call or message, or by facsimile:
 - [current staff inspector, Ray Balcom, phone number (510) 622 –2312]
 - [current staff case handler: James Nusrala, phone number (510) 622 – 2320]
 - [current Regional Board Fax number: (510) 622 – 2460];
- d. Notify the State Office of Emergency Services at phone number: (800) 852 - 7550.
- e. Submit a written report of the incident in follow-up to telephone notification. The written report shall be submitted along with the regular self-monitoring report for the reporting period of the incident, unless directed otherwise by Board staff, and shall include the following:
 - Estimated date and time of overflow start and end.
 - Location of overflow (street address or description of location).
 - Estimated volume of overflow.
 - Final disposition of overflowed wastewater (to land, storm drain, surface water body).
 - Include the name of any receiving water body affected.
 - Cause of overflow.
 - Observed impacts to receiving waters if any (e.g., discoloration, fish kill).
 - Corrective actions that were taken to contain, minimize or cleanup the overflow.
 - Future corrective actions planned to be taken to prevent recurrence and time schedule of implementation.

- Persons or agencies contacted.
- 2. Overflows less than 1,000 gallons.

Overflows less than 1,000 gallons shall be reported by written report, as follows:

- a. The discharge shall prepare and retain records of such overflows, with records available for review by Board staff upon request.
- b. The records for these overflows shall include the information as listed in 1.e. above.
- c. A summary of these overflows shall be submitted to the Regional Board annually, as part of the Discharger's Self-Monitoring Program Annual Report.

G. Reports of Treatment Plant Process Bypass or Significant Non-Compliance.

The following requirements apply to all treatment plant bypasses and significant non-compliance occurrences, except for bypasses under the conditions contained in 40 CFR Part 122.41 (m)(4) as stated in Standard Provision A.13:

- 1. A report shall be made of any incident, other than wet weather discharges or bypasses addressed elsewhere in this permit and self-monitoring program, where the discharger:
 - a. experiences or intends to experience a bypass of any treatment process, or
 - b. experiences violation or threatened violation of any daily maximum effluent limit contained in this Permit or other incident of significant non-compliance, due to:
 - i. maintenance work, power failures or breakdown of waste treatment equipment, or
 - ii. accidents caused by human error or negligence, or
 - iii. other causes such as acts of nature.
- 2. Such incidents shall be reported to the Regional Board in accordance with the following:
 - a. Notify Regional Board staff by telephone:
 - i. within 24 hours of the time the discharger becomes aware of the incident, for incidents that have occurred, and
 - ii. as soon as possible in advance of incidents that have not yet occurred.
 - b. Submit a written report of the incident in follow-up to telephone notification.
 - c. The written report shall be submitted along with regular self-monitoring report for the reporting period of the incident, unless directed otherwise by Board staff.
 - d. The written report for a treatment process bypass shall include the following:
 - i. Identification of treatment process bypassed;

- ii. Date and time of bypass start and end;
 - iii. Total duration time;
 - iv. Estimated total volume;
 - v. Description of, or reference to other report(s) describing, bypass event, cause, corrective actions taken, and any additional monitoring conducted.
- e. The written report for violations of daily maximum effluent limits or similar significant non-compliance shall include information as described in section VII.B. of this SMP.
3. During any treatment process bypass, the discharger shall conduct additional monitoring as described in Section V of this SMP. The results of such monitoring shall be included in the regular SMR for the reporting period of the bypass.

V. Recording Requirements - Records To Be Maintained

Written reports, electronic records, strip charts, equipment calibration and maintenance records, and other records pertinent to demonstrating compliance with waste discharge requirements including self-monitoring program requirements, shall be maintained by the discharger in a manner and at a location (e.g., wastewater treatment plant or discharger offices) such that the records are accessible to Board staff. These records shall be retained by the discharger for a minimum of three years. The minimum period of retention shall be extended during the course of any unresolved litigation regarding the subject discharges, or when requested by the Regional Board or by the Regional Administrator of the US EPA, Region IX.

Records to be maintained shall include the following:

A. Parameter Sampling and Analyses, and Observations.

For each sample, analysis or observation conducted, records shall include the following:

1. Parameter
2. Identity of sampling or observation station, consistent with the station descriptions given in this SMP.
3. Date and time of sampling or observation.
4. Method of sampling (grab, composite, other method).
5. Date and time analysis started and completed, and name of personnel or contract laboratory performing the analysis.
6. Reference or description of procedure(s) used for sample preservation and handling, and analytical method(s) used.
7. Calculations of results.
8. Analytical method detection limits and related quantitation parameters.

9. Results of analyses or observations.

B. Flow Monitoring Data.

For all required flow monitoring (e.g., influent and effluent flows), records shall include the following:

1. Total flow or volume, for each day.
2. Maximum, minimum and average daily flows for each calendar month.

C. Wastewater Treatment Process Solids.

1. For each treatment process unit which involves solid removal from the wastewater stream, records shall include the following:
 - a. Total volume and/or mass quantification of solids removed from each unit (e.g., grit, skimmings, undigested sludge), for each calendar month; and
 - b. Final disposition of such solids (e.g., landfill, other subsequent treatment unit).
2. For final dewatered sludge from the treatment plant as whole, records shall include the following:
 - a. Total volume and/or mass quantification of dewatered sludge, for each calendar month;
 - a. Solids content of the dewatered sludge; and
 - b. Final disposition of dewatered sludge (point of disposal location and disposal method).

D. Disinfection Process.

For the disinfection process, records shall be maintained documenting process operation and performance, including the following:

1. For bacteriological analyses:
 - a. Date and time of each sample collected;
 - b. Wastewater flow rate at the time of sample collection;
 - c. Results of sample analyses (coliform count);
 - d. Required statistical parameters of cumulative coliform values (e.g., moving median or log mean for number of samples or sampling period identified in waste discharge requirements).
2. For chlorination process, at least daily average values for the following:
 - a. Chlorine residual in contact basin (mg/L);
 - b. Contact time (minutes);

- c. Chlorine dosage (kg/day);
- d. Dechlorination chemical dosage (kg/day)

E. Treatment Process Bypasses.

A chronological log of all treatment process bypasses, other than wet weather bypasses addressed elsewhere in this permit and self-monitoring program, including the following:

- 1. Identification of treatment process bypassed;
- 2. Date and time of bypass start and end;
- 3. Total duration time;
- 4. Estimated total volume;
- 5. Description of, or reference to other report(s) describing, bypass event, cause, corrective actions taken, and any additional monitoring conducted.

F. Collection System Overflows

A chronological log of all collection system overflows, including the following:

- 1. Location of overflow;
- 2. Date and time of overflow start and end;
- 3. Total duration time;
- 4. Estimated total volume;
- 5. Description of, or reference to other report(s) describing, overflow event, cause, corrective actions taken, and any additional monitoring conducted.

VI. Selected Constituents Monitoring

- A. Effluent monitoring shall include evaluation for all constituents listed in Table 2 by sampling and analysis of final effluent.
- B. Analyses shall be conducted using the lowest commercially available and reasonably achievable detection levels detailed in Table 1 above. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to respective water quality objectives.

VII. Monitoring Methods And Minimum Detection Levels

The Discharger may use the methods listed in the Table 1 or alternate test procedures that have been approved by the U.S. EPA Regional Administrator pursuant to 40 CFR 136.4 and 40 CFR 136.5 (revised as of May 14, 1999).

VIII. Self-Monitoring Program Certification

I, Loretta K. Barsamian, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Board Order No. RB2-2003-0010.
2. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the Discharger, and revisions will be ordered by the Executive Officer.
3. Is effective as of April 1, 2003.


LORETTA K. BARSAMIAN
Executive Officer

Attachment A: Chronic Toxicity – Definition of Terms and Screening Phase Requirements

ATTACHMENT A

CHRONIC TOXICITY

DEFINITION OF TERMS & SCREENING PHASE REQUIREMENTS

I. Definition of Terms

- A. No observed effect level (NOEL) for compliance determination is equal to IC_{25} or EC_{25} . If the IC_{25} or EC_{25} cannot be statistically determined, the NOEL shall be equal to the NOEC derived using hypothesis testing.
- B. Effective concentration (EC) is a point estimate of the toxicant concentration that would cause an adverse effect on a quantal, "all or nothing," response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Kärber. EC_{25} is the concentration of toxicant (in percent effluent) that causes a response in 25% of the test organisms.
- C. Inhibition Concentration (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a non-lethal, non-quantal biological measurement, such as growth. For example, an IC_{25} is the estimated concentration of toxicant that would cause a 25% reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as USEPA's Bootstrap Procedure.
- D. No observed effect concentration (NOEC) is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. It is determined using hypothesis testing.

II. Chronic Toxicity Screening Phase Requirements

- A. The Discharger shall perform screening phase monitoring:
1. Subsequent to any significant change in the nature of the effluent discharged through changes in sources or treatment, except those changes resulting from reductions in pollutant concentrations attributable to pretreatment, source control, and waste minimization efforts, or
 2. Prior to Permit reissuance. Screening phase monitoring data shall be included in the NPDES Permit application for reissuance. The information shall be as recent as possible, but may be based on screening phase monitoring conducted within 5 years before the permit expiration date.
- B. Design of the screening phase shall, at a minimum, consist of the following elements:
1. Use of test species specified in Tables 1 and 2 (attached), and use of the protocols referenced in those tables, or as approved by the Executive Officer;
 2. Two stages:

- a. Stage 1 shall consist of a minimum of one battery of tests conducted concurrently. Selection of the type of test species and minimum number of tests shall be based on Table 3 (attached); and
 - b. Stage 2 shall consist of a minimum of two test batteries conducted at a monthly frequency using the three most sensitive species based on the Stage 1 test results and as approved by the Executive Officer.
3. Appropriate controls; and
 4. Concurrent reference toxicant tests.
- C. The Discharger shall submit a screening phase proposal to the Executive Officer for approval. The proposal shall address each of the elements listed above.

TABLE C 1
CRITICAL LIFE STAGE TOXICITY TESTS FOR ESTUARINE WATERS

SPECIES	(Scientific name)	EFFECT	TEST DURATION	REFERENCE
alga	(<u>Skeletonema costatum</u>) (<u>Thalassiosira pseudonana</u>)	growth rate	4 days	1
red alga	(<u>Champia parvula</u>)	number of cystocarps	7-9 days	5
Giant kelp	(<u>Macrocystis pyrifera</u>)	percent germination; germ tube length	48 hours	3
abalone	(<u>Haliotis rufescens</u>)	abnormal shell development	48 hours	3
oyster mussel	(<u>Crassostrea gigas</u>) (<u>Mytilus edulis</u>)	{abnormal shell development; {percent survival	48 hours	2
Echinoderms (urchins - (sand dollar -	<u>Strongylocentrotus purpuratus</u> , <u>S. franciscanus</u>); <u>Dendraster excentricus</u>)	percent fertilization	1 hour	4
shrimp	(<u>Mysidopsis bahia</u>)	percent survival; growth; fecundity	7 days	5
silversides	(<u>Menidia beryllina</u>)	larval growth rate; percent survival	7 days	5

Toxicity Test References:

1. American Society for Testing Materials (ASTM). 1990. Standard Guide for conducting static 96-hour toxicity tests with microalgae. Procedure E 1218-90. ASTM Philadelphia, PA.
2. American Society for Testing Materials (ASTM). 1989. Standard Practice for conducting static acute toxicity tests with larvae of four species of bivalve molluscs. Procedure E 724-89. ASTM, Philadelphia, PA.
3. Anderson, B.B. J.W. Hunt, S.L. Turpen, A.R. Coulon, M. Martin, D.L. McKeown, and F.H. Palmer. 1990. Procedures manual for conducting toxicity tests developed by the marine bioassay project. California State Water Resources Control Board, Sacramento.
4. Dinnel, P.J., J. Link, and Q. Stober. 1987. Improved methodology for sea urchin sperm cell bioassay for marine waters. Archives of Environmental Contamination and Toxicology 16:23-32. and S.L. Anderson. Sept. 1, 1989. Technical Memo. San Francisco Bay Regional Water Quality Control Board, Oakland, CA.
5. Weber, C.I., W.B. Horning, II, D.J. Klem, T.W. Neiheisel, P.A. Lewis, E.L. Robinson, J. Menkedick, and F. Kessler (eds.). 1988. Short-term methods for estimating the chronic toxicity of effluents and receiving waters to marine and estuarine organisms. USEPA-600/4-87/028. National Technical Information Service, Springfield, VA.

TABLE C 2
CRITICAL LIFE STAGE TOXICITY TESTS FOR FRESH WATERS

SPECIES	(Scientific name)	EFFECT	TEST DURATION	REFERENCE
fathead minnow	(<u>Pimephales promelas</u>)	survival; growth rate	7 days	6
water flea	(<u>Ceriodaphnia dubia</u>)	survival; number of young	7 days	6
alga	(<u>Selenastrum capricornutum</u>)	cell division rate	4 days	6

Toxicity Test Reference:

6. Horning, W.B. and C.I. Weber (eds.). 1989. Short-term methods for estimating the chronic toxicity of effluents and receiving waters to freshwater organisms. Second edition. USEPA Environmental Monitoring Systems Laboratory, Cincinnati, Ohio. USEPA/600/4-89/001.

TABLE C 3

TOXICITY TEST REQUIREMENTS FOR STAGE ONE SCREENING PHASE

REQUIREMENTS	RECEIVING WATER CHARACTERISTICS		
	Discharges to Coast	Discharges to San Francisco Bay ‡	
	Ocean	Marine	Freshwater
Taxonomic Diversity:	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish
Number of tests of each salinity type: Freshwater (†):	0	1 or 2	3
Marine:	4	3 or 4	0
Total number of tests:	4	5	3

† The fresh water species may be substituted with marine species if:

- 1) The salinity of the effluent is above 5 parts per thousand (ppt) greater than 75% of the time, or
- 2) The ionic strength (TDS or conductivity) of the effluent at the test concentration used to determine compliance is documented to be toxic to the test species.

‡ Marine refers to receiving water salinities greater than 5 ppt at least 75% of the time during a normal water year.

Fresh refers to receiving water with salinities less than 5 ppt at least 75% of the time during a normal water year.

Attachment E

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION

1515 CLAY STREET, SUITE 1400

OAKLAND, CA 94612

(510) 622 - 2300 Fax: (510) 622 - 2460

FACT SHEET

for

**NPDES PERMIT and WASTE DISCHARGE REQUIREMENTS for
CITIES OF SOUTH SAN FRANCISCO AND SAN BRUNO**

Water Quality Control Plant,

North Bayside System Unit

SOUTH SAN FRANCISCO, SAN MATEO COUNTY

NPDES Permit No. CA0038130

ORDER NO. R2-2003-0010

PUBLIC NOTICE:

Written Comments

- Interested persons are invited to submit written comments concerning this draft permit.
- Comments should be submitted to the Regional Board no later than 5:00 p.m. on January 6, 2003.

Public Hearing

- The draft permit will be considered for adoption by the Board at a public hearing during the Board's regular monthly meeting at: Elihu Harris State Office Building, 1515 Clay Street, Oakland, CA; 1st floor Auditorium.
- This meeting will be held on: January 22, 2003, starting at 9:00 am.

Additional Information

- For additional information about this matter, interested persons should contact Regional Board staff member: Mr. James Nusrala, Phone: (510) 622-2320; email: jn@rb2.swrcb.ca.gov

This Fact Sheet contains information regarding an application for waste discharge requirements and National Pollutant Discharge Elimination System (NPDES) permit for the Cities of South San Francisco and San Bruno (Discharger) for discharges from the Discharger's Water Quality Control Plant (WQCP). The Fact Sheet describes the factual, legal, and methodological basis for the proposed permit and provides supporting documentation to explain the rationale and assumptions used in deriving the limits.

I. INTRODUCTION

The Cities of South San Francisco and San Bruno (hereinafter called the Discharger), which operate the Water Quality Control Plant (WQCP), has applied to the Board for reissuance of waste discharge requirements and a permit to discharge treated wastewater to waters of the State and the United States under the National Pollutant Discharge Elimination System (NPDES).

The Discharger owns and operates the WQCP, located in South San Francisco, San Mateo County. The WQCP treats domestic, commercial, and industrial wastewater from the cities of South San Francisco and San Bruno, and portions of Daly City and Colma. The WQCP discharges to the North

Bayside Unit (NBSU), where it is combined with effluent from other permittees, dechlorinated, and then discharged to San Francisco Bay. In 2001, the WQCP discharged an average annual flow of approximately 10.4 million gallons per day (mgd) and a peak maximum flow of 24.4 mgd.

The receiving waters for the subject discharges are the waters of San Francisco Bay. Beneficial uses for the lower San Francisco Bay receiving water, as identified in the Basin Plan and based on known uses of the receiving waters in the vicinity of the discharge, are:

- a. Industrial Service Supply
- b. Navigation
- c. Water Contact Recreation
- d. Non-contact Water Recreation
- e. Ocean Commercial and Sport Fishing
- f. Wildlife Habitat
- g. Preservation of Rare and Endangered Species
- h. Fish Migration
- i. Fish Spawning
- j. Estuarine Habitat

Salinity data were obtained from the two Regional Monitoring Program (RMP) stations nearest to the NBSU outfall, San Bruno Shoal and Redwood Creek, for the period from 1993 to 1998 to determine the receiving waters' salinity. This assessment indicates the receiving waters are marine by both the California Toxics Rule (CTR) and Basin Plan definitions. Therefore, the Order's effluent limitations are based on the salt water WQOs/WQC for the receiving waters.

II. DESCRIPTION OF EFFLUENT

Board Order No. 97-086, as amended by Order 98-117 (hereinafter the Previous Order), presently regulates the discharge from the WQCP. The Discharger's treated wastewater has the characteristics summarized in Table A. The data in Table A represent at least monthly monitoring performed from January 1999 through December 2001. Results for detected organic constituents are included in Table A. All other organic constituents were not detected. The average values in Table A reflect the averages of only the detected values for each parameter.

Table A. Summary of Effluent Data for Outfall E001

Constituent	Average ¹	Maximum ¹
pH, range min/max (s. u.)	7.0	8.2
BOD ₅ (mg/l)	18	140
TSS (mg/l)	18	91
Arsenic (µg/l)	1.6	3.2
Cadmium (µg/l)	0.18	0.8
Chromium (µg/l)	2.5	9
Copper (µg/l)	9.1	32.7
Lead (µg/l)	1	4
Mercury (µg/l)	0.03	0.05
Nickel (µg/l)	5.6	12.3
Selenium (µg/l)	2.5	5
Silver (µg/l)	0.7	2.6
Zinc (µg/l)	41.9	92

Constituent	Average ¹	Maximum ¹
Cyanide (µg/l)	10.6	36
Chloroform (µg/l)	3.4	4
Methylene Chloride	34	65
Tetrachloroethylene (µg/l)	19	19
Toluene (µg/l)	2.5	3
Phenol	880	880
Benzo(a)anthracene (µg/l)	0.02	0.02
Benzo(a)pyrene (µg/l)	0.03	0.03
Benzo(ghi) Perylene (µg/l)	0.02	0.02
Benzo(b)fluoranthene (µg/l)	0.03	0.03
Bis(2-ethylhexyl)phthalate (µg/l)	2	2
Butylbenzyl phthalate (µg/l)	4	4
Chrysene (µg/l)	0.04	0.04
Fluoranthene (µg/l)	1.5	1.5
Flourene (µg/l)	0.03	0.03
Naphthalene (µg/l)	0.3	0.3
Phenanthrene (µg/l)	0.23	0.23
Pyrene (µg/l)	0.14	0.14
Tributyltin (µg/l)	0.019	0.045

¹Where the average and monthly values are equal, the parameter was only detected in one sample.

III. GENERAL RATIONALE

The following documents are the bases for the requirements contained in the proposed Order, and are referred to under the specific rationale section of this Fact Sheet.

- Federal Water Pollution Control Act, as amended (hereinafter the **CWA**).
- Federal Code of Regulations, Title 40 - Protection of Environment, Chapter 1, Environmental Protection Agency, Subchapter D, Water Programs, Parts 122-129 (hereinafter referred to as 40 CFR specific part number).
- Water Quality Control Plan, San Francisco Bay Basin, adopted by the Board on June 21, 1995 (hereinafter the **Basin Plan**). The California State Water Resources Control Board (hereinafter the **State Board**) approved the Basin Plan on July 20, 1995 and by California State Office of Administrative Law approved it on November 13, 1995. The Basin Plan defines beneficial uses and contains WQOs for waters of the State, including Suisun Bay.
- California Toxics Rules, Federal Register, Vol. 65, No. 97, May 18, 2000 (hereinafter the **CTR**).
- National Toxics Rules 57 FR 60848, December 22, 1992, as amended (hereinafter the **NTR**).
- State Board's Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, May 1, 2000 (hereinafter the **State Implementation Policy**, or **SIP**).
- Quality Criteria for Water, USEPA 440/5-86-001, 1986.

- Ambient Water Quality Criteria for Bacteria – 1986, USEPA440/5-84-002, January 1986.

IV. SPECIFIC RATIONALE

Several specific factors affecting the development of limitations and requirements in the proposed Order are discussed as follows:

1. Recent Plant Performance

Section 402(o) of CWA and 40 CFR 122.44(l) require that water quality-based effluent limits (**WQBELs**) in re-issued permits be at least as stringent as in the previous permit. The SIP specifies that interim effluent limitations, if required, must be based on current treatment facility performance or on existing permit limitations whichever is more stringent. In determining what constitutes "recent plant performance", best professional judgment (**BPJ**) was used. Effluent monitoring data collected from 1999 to 2001 are considered representative of recent plant performance. These data specifically accounts for flow variation due to wet and dry years.

2. Impaired Water Bodies in 303(d) List

The USEPA Region 9 office approved the State's 303(d) list of impaired waterbodies on May 12, 1999. The list was prepared in accordance with section 303(d) of the CWA to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. Lower San Francisco Bay is listed for copper, mercury, nickel, selenium, exotic species, total PCBs, dioxin and furan compounds, chlordane, DDT, dieldrin, diazinon, and dioxin-like PCBs.

The SIP requires final effluent limits for all 303(d)-listed pollutants to be based on total maximum daily loads (**TMDL**) and wasteload allocation (**WLA**) results. The SIP and federal regulations also require that final concentration limits be included for all pollutants with reasonable potential (**RP**). The SIP requires that where the discharger has demonstrated infeasibility to meet the final limits, interim concentration limits, and performance-based mass limits for bioaccumulative pollutants, be established in the permit with a compliance schedule in effect until final effluent limits are adopted. The SIP also requires the inclusion of appropriate provisions for waste minimization and source control.

3. Basis for Prohibitions

- a) Prohibition A.1 (no discharges other than as described in the permit): This prohibition is based on the Basin Plan, previous Order and BPJ.
- b) Prohibition A.2 (10:1 dilution): This prohibition is based on the Basin Plan. The Basin Plan prohibits discharges not receiving 10:1 dilution (Chapter 4, Discharge Prohibition No. 1).
- c) Prohibition A.3 (no bypass): This prohibition is based on the Basin Plan. The Basin Plan prohibits the discharge of partially treated and untreated wastes (Chapter 4, Discharge Prohibition No.15). This prohibition is based on general concepts contained in Sections 13260 through 13264 of the California Water Code that relate to the discharge of waste to State waters without filing for and being issued a permit. Under certain circumstances, as stated in 40 CFR 122.41 (m), the facilities may bypass waste streams in order to prevent loss of life, personal

injury, or severe property damage, or if there were no feasible alternatives to the bypass and the discharger submitted notices of the anticipated bypass.

- d) Prohibition A.4 (flow limit): This prohibition is based on the reliable treatment capacity of the plant. Exceedance of the treatment plant's average dry weather flow design capacity of 13 mgd may result in lowering the reliability of achieving compliance with waste discharge requirements. This prohibition is based on 40 CFR 122.41(l).
- e) Prohibition A.5 (no storm water pollution, toxic and deleterious substances, contamination): This prohibition is based on the Basin Plan to protect beneficial uses of the receiving water from unpermitted discharges, and the intent of sections 13260 through 13264 of the California Water Code relating to the discharge of waste to State Waters without filing for and being issued a permit.

4. Basis for Effluent Limitations

- a) Effluent Limitations B.1 (Discharges to San Francisco Bay; listed below):

Permit Limit	Parameter	Units	Monthly Average	Weekly Average	Daily Maximum	Instantaneous Maximum
B.1.a.	Biochemical Oxygen Demand (BOD)	mg/L	30	45	--	--
B.1.b.	Total Suspended Solids (TSS)	mg/L	30	45	--	--
B.1.c.	Oil & Grease	mg/L	10	--	20	--
B.1.d.	Settleable Matter	ml/L-hr	0.1	--	0.2	--
B.1.e.	Total Chlorine Residual ⁽¹⁾	mg/L	--	--	--	0.0
B.2.	pH	>6.0, <9.0				
B.3.	BOD and TSS Removal	%	Monthly average, minimum 85% removal			
B.4.	Fecal Coliform ⁽²⁾	MPN/100 ml	--	--	--	

⁽¹⁾ Requirement defined as below the limit of detection in the latest edition of "Statistical Methods for Examination of Water and Wastewater." Compliance with this limitation must be demonstrated at the NBSU joint dechlorination facility.

⁽²⁾ The fecal coliform limits are imposed as a 5-sample geometric mean limit of 200 MPN/100mL and 90th percentile limit of the last ten samples of 400 MPN/100mL as effluent limits.

- BOD and TSS, 30 mg/L monthly average and 45 mg/L weekly average (Effluent Limitation B.1.a and b): These are standard secondary treatment requirements, and existing permit effluent limitations that are based on Basin Plan requirements, derived from federal requirements (40 CFR 133.102). The facility has demonstrated compliance by existing plant performance.
 - Oil & Grease, Settleable Matter and Total Chlorine Residual: Standard secondary treatment requirements, and existing permit effluent limitations, based on Basin Plan requirements, Table 4-2, page 4-69.
- b) Effluent Limitation B.2 (pH): The pH limit is based on the Basin Plan, Table 4-2, page 4-69, and 40 CFR 133.102.

Effluent Limitation B.3 (BOD and TSS monthly average 85 percent removal): These are standard secondary treatment requirements, and existing permit effluent limitations based on

Basin Plan requirements Table 4-2, page 4-69, derived from federal requirements (40 CFR 133.102; definition in 133.101).

- c) **Effluent Limitation B.4 (Fecal Coliform):** The purpose of this effluent limitation is to ensure adequate disinfection of the discharge in order to protect beneficial uses of the receiving waters. Effluent limits are based on WQOs for bacteriological parameters for receiving water beneficial uses. WQOs are given in terms of parameters which serve as surrogates for pathogenic organisms. The traditional parameter in this regard is coliform bacteria, either as total coliform or as fecal coliform. The Basin Plan's Table 4-2, page 4-69, and its footnotes allow fecal coliform limitations to be substituted for total coliform limitations provided that the discharger conclusively demonstrates "through a program approved by the Regional Board that such substitution will not result in unacceptable adverse impacts on the beneficial uses of the receiving waters". Order No. 98-117 amended the Discharger's permit and those of other dischargers through the NBSU to replace total coliform limits with fecal coliform limits. Based on limited contact recreation in the vicinity of the discharge, this Order provides a 5-day geometric mean fecal coliform WQO of 200 MPN/100mL and 90th percentile limit of 400 MPN/100mL. Studies have shown that fecal coliform levels in the wastewater discharge do not affect the historic south Foster City shellfish harvesting area.
- d) **Effluent Limitation B.5 (Whole Effluent Toxicity):** The Basin Plan specifies a narrative objective for toxicity, requiring that all waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental response on aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alternations in population, community ecology, or receiving water biota. These effluent toxicity limits are necessary to ensure that this objective is protected. The acute toxicity limit is based on the Basin Plan Table 4-2, page 4-69.
- e) **Effluent Limitation B.6 (Chronic Toxicity):** The chronic toxicity requirements are based on the Basin Plan's narrative toxicity definition on page 3-4.
- f) **Effluent Limitation B.7 (Toxic Substances):**
 - 1. **Reasonable Potential Analysis (RPA):**
40 CFR 122.44(d)(1)(i) specifies that permits are required to include WQBELs for all pollutants "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard". Thus, the fundamental step in determining whether or not a WQBEL is required is to assess a pollutant's reasonable potential of excursion of its applicable WQO or WQC. The following section describes the reasonable potential analysis and the results of such an analysis for the pollutants identified in the Basin Plan and the CTR.
 - i) **WQOs and WQC:** The RPA involves the comparison of effluent data with appropriate WQOs including narrative toxicity objectives in the Basin Plan, applicable WQC in the CTR/NTR, and USEPA's 1986 Quality Criteria for Water. The Basin Plan objectives and CTR criteria are shown in **Attachment 1, 2, and 3** of this Fact Sheet.

- ii) *Methodology*: RPA is conducted using the method and procedures prescribed in Section 1.3 of the SIP. Board staff have analyzed the effluent data to determine if the discharge had reasonable potential to cause or contribute to exceedances of applicable WQOs or WQC. **Attachment 1, 2 and 3** of this Fact Sheet shows the step-wise process described in Section 1.3 of the SIP.
- iii) *Effluent and background data*: The RPA is based on effluent data collected by the Discharger from January 1999 through December 2001 for metals, phenol, and cyanide (see **Attachment 1** of this Fact Sheet). In determining RP for organic pollutants, effluent data collected from 1999 through 2001 were reviewed (see **Attachments 2 and 3** of this Fact Sheet. Water quality data collected from San Francisco Bay at the Yerba Buena Island and Richardson Bay monitoring stations through the RMP in 1993 to 1998 were reviewed to determine the maximum observed background values. The RMP stations at Yerba Buena Island and Richardson Bay located in the Central Bay have been sampled for most of the inorganic and some of the organic toxic pollutants. However, not all the constituents listed in the CTR were analyzed by the RMP during this time. This data gap is filled by a provision in this Order that requires the discharger to determine ambient background for those constituents. Upon completion of the required ambient background monitoring, the Board shall use the gathered data to conduct the RPA and determine if additional WQBELs are required.
- iv) *RPA determination*: The RPA results are shown below in **Table B** below and **Attachments 1, 2, and 3** of this Fact Sheet. Pollutants that tested positively for RP were copper, mercury, nickel, silver, selenium, zinc, cyanide, tributyltin, tetrachloroethylene, 4,4'-DDE, and Dieldrin.

Table B. Summary of Reasonable Potential Results

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL ¹ (µg/L)	Governing WQO/WQC (ug/L)	Maximum Background (µg/L)	RPA Results ²
2	Arsenic	3.2	36	2.22	N
4	Cadmium	0.31	9.3	0.127	N
5b	Chromium (VI)	9	50	4.4	N
6	Copper	32.7	3.7	2.45	Y
7	Lead	4	5.6	0.804	N
8	Mercury	.05	0.025	0.0064	Y
9	Nickel	12.3	7.1	3.5	Y
10	Selenium	5	5	0.19	Y
11	Silver	2.64	2.24	0.068	Y
13	Zinc	92	58	4.6	Y
14	Cyanide	36	1	NA	Y
16	2,3,7,8-TCDD (Dioxin)	0.0000011	1.4E-08	NA	N
17	Acrolein	NA	780	NA	Ud
18	Acrylonitrile	NA	0.66	NA	Ud
19	Benzene	1	71	NA	N
20	Bromoform	1	360	NA	N

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL ¹ (µg/L)	Governing WQO/WQC (ug/L)	Maximum Background (µg/L)	RPA Results ²
21	Carbon Tetrachloride	1	4.4	NA	N
22	Chlorobenzene	1	21000	NA	N
23	Chlordibromomethane	1	34	NA	N
24	Chloroethane	5	N/A	NA	Uo
25	2-Chloroethylvinyl Ether	NA	N/A	NA	Uo, Ud
26	Chloroform	4	N/A	NA	Uo
27	Dichlorobromomethane	1	46	NA	N
28	1,1-Dichloroethane	1	N/A	NA	Uo
29	1,2-Dichloroethane	1	99	NA	N
30	1,1-Dichloroethylene	1	3.2	NA	N
31	1,2-Dichloropropane	1	39	NA	N
32	1,3-Dichloropropylene	1	1700	NA	N
33	Ethylbenzene	1	29000	NA	N
34	Methyl Bromide	5	4000	NA	N
35	Methyl Chloride	5	N/A	NA	Uo
36	Methylene Chloride	65	1600	NA	N
37	1,1,2,2-Tetrachloroethane	1	11	NA	N
38	Tetrachloroethylene	19	8.85	NA	Y
39	Toluene	3	200000	NA	N
40	1,2-Trans-Dichloroethylene	1	140000	NA	N
41	1,1,1-Trichloroethane	1	N/A	NA	Uo
42	1,1,2-Trichloroethane	1	42	NA	N
43	Trichloroethylene	1	81	NA	N
44	Vinyl Chloride	1	525	NA	N
45	Chlorophenol	2	400	NA	N
46	2,4-Dichlorophenol	1	790	NA	N
47	2,4-Dimethylphenol	2	2300	NA	N
48	2-Methyl-4,6-Dinitrophenol	2	765	NA	N
49	2,4-Dinitrophenol	2	14000	NA	N
50	2-Nitrophenol	2	NA	NA	Uo
51	4-Nitrophenol	2	NA	NA	Uo
52	3-Methyl-4-Chlorophenol	2	NA	NA	Uo
53	Pentachlorophenol	2	7.9	NA	N
54	Phenol	2	500	NA	N
55	2,4,6-Trichlorophenol	2	6.5	NA	N
56	Acenaphthene	.1	2700	0.0015	N
57	Acenaphthylene	0.1	NA	0.00053	Uo
58	Anthracene	0.02	110000	0.0005	N
59	Benzidine	50	0.00054	NA	N
60	Benzo(a)Anthracene	.02	0.049	0.0053	N
61	Benzo(a)Pyrene	.03	0.049	0.0025	N
62	Benzo(b)Fluoranthene	.03	0.049	0.0046	N
63	Benzo(ghi)Perylene	.02	NA	0.006	Uo
64	Benzo(k)Fluoranthene	.02	0.049	0.0015	N
65	Bis(2-Chloroethoxy)Methane	1	NA	NA	Uo
66	Bis(2-Chloroethyl)Ether	2	1.4	NA	N
67	Bis(2-Chloroisopropyl)Ether	1	170000	NA	N

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL ¹ (µg/L)	Governing WQO/WQC (ug/L)	Maximum Background (µg/L)	RPA Results ²
68	Bis(2-Ethylhexyl)Phthalate	2	5.9	NA	N
69	4-Bromophenyl Phenyl Ether	1	NA	NA	Uo
70	Butylbenzyl Phthalate	4	5200	NA	N
71	2-Chloronaphthalene	1	4300	NA	N
72	4-Chlorophenyl Phenyl Ether	1	NA	NA	Uo
73	Chrysene	.04	0.049	0.0041	N
74	Dibenzo(a,h)Anthracene	.02	0.049	0.0006	N
75	1,2 Dichlorobenzene	1	17000	NA	N
76	1,3 Dichlorobenzene	1	2600	NA	N
77	1,4 Dichlorobenzene	1	2600	NA	N
78	3,3-Dichlorobenzidine	2	0.077	NA	N
79	Diethyl Phthalate	1	120000	NA	N
80	Dimethyl Phthalate	1	2900000	NA	N
81	Di-n-Butyl Phthalate	1	12000	NA	N
82	2,4-Dinitrotoluene	1	9.1	NA	N
83	2,6-Dinitrotoluene	1	NA	NA	Uo
84	Di-n-Octyl Phthalate	2	NA	NA	Uo
85	1,2-Diphenylhydrazine	NA	0.54	NA	Ud
86	Fluoranthene	1.5	370	0.007	N
87	Fluorene	.03	14000	0.002078	N
88	Hexachlorobenzene	1	0.00077	NA	N
89	Hexachlorobutadiene	1	50	NA	N
90	Hexachlorocyclopentadiene	1	17000	NA	N
91	Hexachloroethane	1	8.9	NA	N
92	Indeno(1,2,3-cd) Pyrene	.02	0.049	0.004	N
93	Isophorone	2	600	NA	N
94	Naphthalene	.3	NA	0.00229	Uo
95	Nitrobenzene	1	1900	NA	N
96	N-Nitrosodimethylamine	NA	8.1	NA	Ud
97	N-Nitrosodi-n-Propylamine	1	1.4	NA	N
98	N-Nitrosodiphenylamine	1	16	NA	N
99	Phenanthrene	.23	NA	0.0061	Uo
100	Pyrene	.14	11000	0.0051	N
101	1,2,4-Trichlorobenzene	1	NA	NA	Uo
102	Aldrin	0.04	0.00014	NA	N
103	alpha-BHC	0.04	0.013	NA	N
104	beta-BHC	0.04	0.046	NA	N
105	gamma-BHC	.04	0.063	NA	N
106	delta-BHC	.04	NA	NA	Uo
107	Chlordane	0.02	0.00059	0.00018	N
108	4,4'-DDT	0.04	0.00059	0.000066	N
109	4,4'-DDE	0.04	0.00059	0.00069	Y
110	4,4'-DDD	0.04	0.00084	0.000313	N
111	Dieldrin	0.04	0.00014	0.000264	Y
112	alpha-Endosulfan	0.04	0.0087	0.000031	N
113	beta-Endosulfan	0.04	0.0087	0.000069	N
114	Endosulfan Sulfate	.04	240	0.000011	N

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL ¹ (µg/L)	Governing WQO/WQC (ug/L)	Maximum Background (µg/L)	RPA Results ²
115	Endrin	0.04	0.0023	0.000016	N
116	Endrin Aldehyde	.04	0.81	NA	N
117	Heptachlor	0.04	0.00021	0.000019	N
118	Heptachlor Epoxide	0.04	0.00011	0.000094	N
119-125	PCBs	0.2	0.00017	NA	N
126	Toxaphene	0.06	0.0002	NA	N
	Tributyltin	.045	0.01	NA	Y

1) Maximum Effluent Concentration (MEC) in bold is the actual detected MEC, otherwise the MEC shown is the minimum detection level.

NA = Not Available (there is not monitoring data for this constituent).

2) RP = Yes, if (1) either MEC or Background > WQO/WQC or (2) all effluent concentrations non-detect and background < WQO/WQC or no background available.

RP = No, if both MEC or background < WQO/WQC.

RP = Ud (undetermined due to lack of effluent monitoring data).

RP = Uo (undetermined if no objective promulgated).

v) *Organic constituents with limited data:* Reasonable potential could not be determined for many of the organic priority or toxic pollutants due to (i) the absence of applicable WQOs or WQC, or (ii) the absence of effluent data. The Discharger is required to initiate or continue to monitor for those pollutants in this category using analytical methods that provide the best detection limits reasonably feasible. If detection limits improve to the point where it is feasible to evaluate compliance, these pollutants' RP will be reevaluated in the future to determine whether there is a need to add numeric effluent limits to the permit or to continue monitoring.

vi) *Pollutants with no reasonable potential:* WQBELs are not included in the Order for constituents that do not have reasonable potential to cause or contribute to exceedance of applicable WQOs or WQC. However, monitoring for those pollutants is still required, as specified in the Self-Monitoring Program of the Order. If concentrations or mass loads of these constituents were found to have increased significantly, the Discharger will be required to investigate the source(s) of the increase(s). Remedial measures are required if the increases pose a threat to water quality in the receiving water.

vii) *Permit Reopener:* The permit includes a reopener provision to allow numeric effluent limits to be added for any constituent that in the future exhibits reasonable potential to cause or contribute to exceedance of a WQO or WQC. This determination, based on monitoring results, will be made by the Board.

2. Final Water Quality-Based Effluent Limits (WQBELs): The final effluent limitations in Section B.7 in the Order are water quality-based. They were developed and set for the toxic and priority pollutants that were determined to have reasonable potential to cause or contribute to exceedances of the WQOs or WQC. Final effluent limitations were calculated based on appropriate WQOs/WQC, background concentrations at two central bay monitoring locations (Yerba Buena Island and Richardson Bay), a maximum dilution ratio of 10:1 (for pollutants not shown to be bioaccumulative at levels of concern in the Bay), and the appropriate procedures specified in Section 1.4 of the SIP (See

Attachment 4 of this Fact Sheet). For the purpose of the Order, final WQBELs refer to all non-interim effluent limitations. The WQO or WQC used for each pollutant with RP is indicated in Table C below as well as in **Attachment 4**.

The Board believes a conservative limit of 10:1 dilution credit for discharges to the Bay is necessary for protection of beneficial uses. The basis for limiting the dilution credit is based on SIP provisions in Section 1.4.2. The following outlines the basis for derivation of the dilution credit:

- a. A far-field background station is appropriate because the receiving waterbody (Bay) is a very complex estuarine system with highly variable and seasonal upstream freshwater inflows and diurnal tidal saltwater inputs.
- b. Due to the complex hydrology of the San Francisco Bay, a mixing zone cannot be accurately established.
- c. Previous dilution studies do not fully account for the cumulative effects of other wastewater discharges to the system.
- d. The SIP allows limiting a mixing zone and dilution credit for persistent pollutants (e.g., copper, nickel, silver, and zinc).

The main justification for using a 10:1 dilution credit is uncertainty in accurately determining ambient background and uncertainty in accurately determining the mixing zone in a complex estuarine system with multiple wastewater discharges.

a. **Complex Estuarine System Necessitates Far-Field Background** - The SIP allows background to be determined on a discharge-by-discharge or water body-by-water body basis (SIP section 1.4.3). Consistent with the SIP, Board staff has chosen to use a water body-by-water body basis because of the uncertainties inherent in accurately characterizing ambient background in a complex estuarine system on a discharge-by-discharge basis.

With this in mind, the Yerba Buena Island and Richardson Bay Stations fit the guidance for ambient background in the SIP compared to other stations in the Regional Monitoring Program. The SIP states that background data are applicable if they are "representative of the ambient receiving water column that will mix with the discharge." Board Staff believe that data from these stations are representative of water that will mix with the discharge from Outfall E-001. Although these stations are located near the Golden Gate, they would represent the typical water flushing in and out in the Bay Area each tidal cycle. For most of the Bay Area, the waters represented by these stations make up a large part of the receiving water that will mix with the discharge.

b. **Uncertainties Prevent Accurate Mixing Zones in Complex Estuarine Systems** - There are uncertainties in accurately determining the mixing zones for each discharge. The models that have been used by dischargers to predict dilution have not considered the three-dimensional nature of the currents in the estuary resulting from the interaction of tidal flushes and seasonal fresh water outflows. Salt water is heavier than fresh water. Colder salt water from the ocean flushes in twice a day generally under the warmer fresh rivers waters that flows out annually. When these waters mix and interact, complex circulation patterns occur due to the different densities of these waters. These complex patterns occur throughout the estuary but are most prevalent in the San Pablo Bay,

Carquinez Strait, and Suisun Bay areas. The locations change depending on the strength of each tide and the variable rate of delta outflow. Additionally, sediment loads to the Bay from the Central Valley also change on a longer-term basis. These changes can result in changes to the depths of different parts of the Bay making some areas more shallow and/or other areas more deep. These changes affect flow patterns that in turn can affect the initial dilution achieved by a discharger's diffuser.

c. Dye studies do not account for cumulative effects from other discharges - The tracer and dye studies conducted are often not long enough in duration to fully assess the long residence time of a portion of the discharge that is not flushed out of the system. In other words, some of the discharge, albeit a small portion, makes up part of the dilution water. So unless the dye studies are of long enough duration, the diluting effect on the dye measures only the initial dilution with "clean" dilution water rather than the actual dilution with "clean" dilution water plus some amount of original discharge that resides in the system. Furthermore, both models and dye studies that have been conducted have not considered the effects of discharges from other nearby discharge sources, nor the cumulative effect of discharges from over 20 other major dischargers to San Francisco Bay system. While it can be argued the effects from other discharges are accounted for by factoring in the local background concentration in calculating the limits, accurate characterization of local background levels are also subject to uncertainties resulting from the interaction of tidal flushing and seasonal fresh water outflows described above.

d. Mixing Zone Is Further Limited for Persistent Pollutants - Discharges to the Bay Area waters are not completely-mixed discharges as defined by the SIP. Thus, the dilution credit should be determined using site-specific information for incompletely-mixed discharges. The SIP in section 1.4.2.2 specifies that the Regional Board "significantly limit a mixing zone and dilution credit as necessary... For example, in determining the extent of ... a mixing zone or dilution credit, the RWQCB shall consider the presence of pollutants in the discharge that are ... persistent." The SIP defines persistent pollutants to be "substances for which degradation or decomposition in the environment is nonexistent or very slow." The pollutants at issue here are persistent pollutants (e.g., copper, nickel, silver, and zinc). The dilution studies that estimate actual dilution do not address the effects of these persistent pollutants in the Bay environment, such as their long-term effects on sediment concentrations."

Table C. Water Quality Objectives/Criteria for Pollutants with RP

Pollutant	Chronic WQO/WQC (µg/L)	Acute WQO/WQC (µg/L)	Human Health (µg/L)	Basis of Lowest WQO/WQC Used in RP
Copper	3.7	5.8	-	CTR
Mercury	0.025	-	-	Basin Plan
Nickel	7.1	140	-	Basin Plan
Silver	--	2.3	-	Basin Plan
Selenium	5	5	-	NTR
Zinc	58	170	-	Basin Plan
Cyanide	1	1	-	NTR
Dieldrin	-	-	0.00014	CTR
4,4'-DDE	-	-	0.00059	CTR

Pollutant	Chronic WQO/WQC ($\mu\text{g/L}$)	Acute WQO/WQC ($\mu\text{g/L}$)	Human Health ($\mu\text{g/L}$)	Basis of Lowest WQO/WQC Used in RP
Tributyltin	0.01	0.37	-	BPJ as defined in Basin Plan p 4-7/ SIP Section 2.2
Tetrachloroethylene	-	-	8.85	CTR

3. **Interim Limits:** Interim effluent limitations were derived for those constituents for which the Discharger has shown infeasibility of complying with the respective limits and has demonstrated that compliance schedules are justified based on the Discharger's source control and pollution minimization efforts in the past and continued efforts in the present and future. In this Order, interim performance-based limits were derived for copper. The interim effluent concentration limitations were based on the more stringent of either the existing limit or the recent plant performance as required in Section 2.2.1 of the SIP. Interim limits were also established for mercury, selenium, and cyanide. The interim limits are also discussed in more detail below.
4. **Compliance Schedules and Infeasibility Analysis**
The Discharger submitted infeasibility to comply reports on May 31, 2002, and December 4, 2002, for copper, mercury, selenium, cyanide, and tributyltin. For constituents that Board staff could perform a meaningful statistical analysis (i.e., copper and mercury), it used self-monitoring data from 1999-2001 to compare the mean, 95th percentile, and 99th percentile with the long-term average (LTA), AMEL, and MDEL to confirm if it is feasible for the Discharger to comply with WQBELs. If the LTA, AMEL, and MDEL all exceed the mean, 95th percentile, and 99th percentile, it is feasible for the Discharger to comply with WQBELs. The table D below shows these comparisons in $\mu\text{g/L}$:

Table D: Summary of Feasibility Analysis

Constituent	Mean / LTA	95 th / AMEL	99 th / MDEL	Feasible to Comply
Copper	9.1 > 8.1	18.96 > 12.3	27.1 > 24.1	No
Mercury	0.02 > 0.01	0.05 > 0.02	0.07 > 0.04	No

For the remaining constituents (selenium, tetrachloroethylene, and tributyltin) Board staff compared the MEC to the lowest WQBEL (both in $\mu\text{g/L}$) to determine if the Discharger can achieve immediate compliance with the final limits (see table E below). This abbreviated method is used as there is limited detectable data for the constituents mentioned above.

Table E: Summary of Feasibility Analysis

Constituent	AMEL	MDEL	MEC	Is MEC > AMEL	Feasible to Comply
Selenium	2.03	5	5	Yes	No
Tetrachloroethylene	89	177	19	No	Yes
Tributyltin	0.008	0.016	0.045	Yes	No

The Discharger indicated that it cannot comply with final WQBELs for 4,4-DDE and dieldrin as: (a) analytical methods cannot detect and quantify 4,4'-DDE and dieldrin at

proposed effluent limits and (b) the WQCP is not a known source of these contaminants, and therefore, it does not have a practical means to reduce the source(s) of these contaminants. Board staff did not accept the infeasibility analysis performed by the Discharger. The Discharger has never detected either constituent in its effluent, it is appropriate for the Discharger to immediately comply with the final WQBELs. The proposed Order requires that the Discharger demonstrate compliance with the WQBELs for 4,4'-DDE and dieldrin by showing no detection at the minimum level (MLs) included in the SIP.

It is infeasible to immediately comply with the WQBELs calculated according to Section 1.4 of the SIP for copper, mercury, selenium, tributyltin, and cyanide. Therefore, this permit establishes a 5-year compliance schedule of March 31, 2008 for pollutants on the (303)d list with final limits based on CTR or NTR criteria (i.e., copper and selenium) and a compliance schedule of March 31, 2010 for pollutants on the 303(d) list with final limits based on the Basin Plan objectives (i.e., mercury). The March 31, 2008 and March 31, 2010 compliance schedules both exceed the length of the permit, therefore, these calculated final limits are intended for point of reference for the feasibility demonstration and are only included in the findings by reference to the Fact Sheet. Additionally, the actual final WQBELs for copper, and mercury will very likely be based on either site-specific objectives (SSOs) or the TMDLs/WLAs as described in other findings specific to each of the pollutants.

Pursuant to the SIP (Section 2.2.2, Interim Requirements for Providing Data), where available data are insufficient to calculate a final effluent limit (e.g., cyanide), a data collection period of May 18, 2003 is established. This Order contains a provision requiring the Discharger to join a group study for data collection in the ambient background and to determine site-specific objectives. The Discharger is required to participate in the studies and submit reports to the Board by 2003. The Board intends to include, in a subsequent permit revision, a final limit based on the study results. However, if the Discharger requests and demonstrates that it is infeasible to comply with the revised final limit, the permit revision will establish a maximum 5-year compliance schedule.

As discussed in 4.h. below, the Discharger has not been able to consistently comply with the existing permit limit for cyanide (which is the interim limit in this Order). In part, this may be due to analytical problems. In the group study, the Discharger is required to complete a facility-specific study to evaluate whether detected cyanide concentrations are due to analytical problems or actual loadings to the treatment plant. The study also requires the Discharger to design and implement cyanide source control measures to reduce actual loadings and provide for near term compliance with the interim limit.

During the compliance schedules, interim limits are included based on current treatment facility performance or on existing permit limits, whichever is more stringent to maintain existing water quality. The Board may take appropriate enforcement actions if interim limits and requirements are not met.

- g) Copper – Further Discussion and Rationale for Interim Effluent Limitation: Interim effluent limitations are required for copper since the Discharger has demonstrated and the Board verified that the final average monthly limit calculated according to the SIP will be infeasible to meet. The SIP requires the interim numeric effluent limit for the pollutant be based on either current

treatment facility performance, or on the previous Order's limitation, whichever is more stringent. Self-monitoring data from 1999-2001 indicate that effluent copper concentrations ranged from 1.6 $\mu\text{g/L}$ to 32.7 $\mu\text{g/L}$. Board staff calculated an interim performance-based limit of 38.5 $\mu\text{g/L}$ (3 standard deviations above the mean), which exceeds the average monthly limit of 37 $\mu\text{g/L}$ contained in the previous permit. To comply with the SIP, this Order retains the copper limit from the previous permit.

- h) Cyanide – Further Discussion and Rationale for the Interim Effluent Limitation: The final WQBEL will be recalculated based on additional effluent and ambient background information, or a cyanide SSO. The CTR contains a saltwater numeric cyanide WQC of 1 $\mu\text{g/L}$ as a Criterion Continuous Concentration (CCC). This WQC is below the presently achievable reporting limit (between 3 - 5 $\mu\text{g/L}$). The first trigger of the RPA indicates cyanide has reasonable potential, and a numeric WQBEL is required. It is acknowledged that there is insufficient ambient background data to calculate the final limits at this time. There were only six total and six dissolved cyanide ambient background concentrations (all $<1 \mu\text{g/L}$) collected in 1993 at the two background stations. A data collection period until May 18, 2003 is established to address the data needs. The Board intends to include, in a subsequent permit revision, a final limit based on the study results. However, if the Discharger requests and demonstrates that it is infeasible to comply with the final limit, the permit revision will establish a maximum 5-year compliance schedule. Board staff calculated an interim performance-based concentration limit of 65 $\mu\text{g/L}$ (3 standard deviations above the mean), which exceeds the existing daily average limit of 10 $\mu\text{g/L}$ contained in the previous permit. To comply with anti-backsliding requirements, this Order retains the cyanide limit from the previous permit. The point of compliance for the interim cyanide limit is E-002 (the dechlorinated NBSU combined outfall sample). This is changed from the previous permit, where the compliance point was E-001, a point after when the effluent is chlorinated, but before dechlorination. Based on an evaluation of the effluent data from 1999 through 2001, the Discharger has exceeded the cyanide limit five times. There is evidence to show that the presence of cyanide is an artifact of chlorination, as the influent samples are all non-detect for cyanide. Several investigations, including those initiated by the Water Environment Research Foundation (WERF), and the East Bay Municipal Utilities District (EBMUD), demonstrate that cyanide may be an artifact of the analytical method.
- i) Mercury - Further Discussion and Rationale for the Interim Effluent Limitation: The calculated final average monthly and daily maximum effluent limits for mercury are 0.019 $\mu\text{g/L}$ and 0.045 $\mu\text{g/L}$, respectively. The existing monthly and daily average permit limits for mercury are 0.21 $\mu\text{g/L}$ and 1 $\mu\text{g/L}$. Effluent concentrations from January 1999 through December 2001 ranged from < 0.007 to 0.2 $\mu\text{g/L}$ (36 samples). This Order establishes an interim monthly average limit for mercury based on staff's analysis of the performance of over 20 secondary treatment plants in the Bay Area. The Discharger generally operates a secondary-level treatment plant, therefore the value of the interim concentration-based limit is 0.087 $\mu\text{g/L}$. Since June 1999 when the Discharger began using UltraClean mercury sampling and analysis techniques, all mercury levels have been below the interim limit of 0.087 $\mu\text{g/L}$.

In addition, the Order includes an interim mercury mass-based effluent limitation of 0.071 kilograms per month. This mass-based effluent limitation is based on facility flow and mercury concentration data collected since January 1999, see **Attachment 5** of this Fact Sheet. It will maintain current loadings until a TMDL is established. The final mass-based effluent limitation will likely be based on the WLA derived from the mercury TMDL. This number was derived by taking the 99.87 percentile value of flow from January 1999 to December 2001.

5. Basis for Receiving Water Limitations

- a) Receiving water limitations C.1 and C.2 (conditions to be avoided): These limits are based on the previous Order and the narrative/numerical objectives contained in Chapter 3 of the Basin Plan, page 3-2 – 3-5.
- b) Receiving water limitation C.3 (compliance with State Law): This requirement is in the previous permit, requires compliance with Federal and State law, and is self-explanatory.

6. Basis for Self-Monitoring Requirements

The SMP includes monitoring at the outfall from the WQCP (E001) for conventional, non-conventional, and toxic pollutants, and acute and chronic toxicity. WQCP influent monitoring is also required for selected parameters to assess treatment system performance. For the most part, the monitoring is the same as required by the previous Order, including the amended requirements for fecal coliform. Monthly metals, mercury, and cyanide monitoring is consistent with the previous Order. Monitoring for tributyltin, 4,4'-DDE, dieldrin, and tetrachloroethylene is required to demonstrate compliance with effluent limits. Finally, previous monitoring for toxic organic pollutants is replaced by more comprehensive monitoring as required by participation in the RMP.

7. Basis for Sludge Management Practices

These requirements are based on Table 4.1 of the Basin Plan, and 40 CFR 503.

8. Basis for Provisions

- a) Provisions E.1. (Permit Compliance and Rescission of Previous Permit): Time of compliance is based on 40 CFR 122. The basis of this Order superceding and rescinding the previous permit Order is 40 CFR 122.46.
- b) Provision E.2. (Regional Cyanide Study and Schedule): This provision, based on BPJ, requires the Discharger to characterize background ambient cyanide concentrations and to participate in an on-going group effort to develop a site-specific objective for cyanide.
- c) Provision E.3 (Facility-specific Cyanide Study): This provision, based on BPJ, requires the Discharger to conduct a study to evaluate whether detected levels of cyanide in the effluent are due to analytical problems or actual loadings and, as appropriate, develop and implement cyanide source control measures to provide for near term compliance with the interim limit.
- d) Provision E.4. (Pollutant Minimization Program): This provision is based on the Basin Plan, page 4-25 – 4-28, and the SIP, Section 2.1, Compliance Schedules.
- e) Provision E.5. (Whole Effluent Acute Toxicity): This provision establishes conditions by which compliance with permit effluent limits for acute toxicity will be demonstrated. Conditions include the use of 96-hour bioassays, flow-through bioassays for discharges to the NBSU and then San Francisco Bay, the use of fathead minnows and three-spine stickleback as the test species, and use of approved test methods as specified. No later than October 1, 2003, the

Discharger shall switch from 3rd to 4th Edition EPA protocol. These conditions are based on the effluent limits for acute toxicity given in the Basin Plan, Chapter 4, and BPJ.

- f) Provision E.6. (Whole Effluent Chronic Toxicity): This provision establishes conditions and protocol by which compliance with the Basin Plan narrative WQO for toxicity will be demonstrated. Conditions include required monitoring and evaluation of the effluent for chronic toxicity and numerical values for chronic toxicity evaluation to be used as 'triggers' for initiating accelerated monitoring and toxicity reduction evaluation(s). These conditions apply to the discharges to NBSU and then San Francisco Bay and the numerical values for chronic toxicity evaluation are based on a minimum initial dilution ratio of 10:1. This provision also requires the discharger to conduct a screening phase monitoring requirement and implement toxicity identification and reduction evaluations when there is consistent chronic toxicity in the discharge. New testing species and/or test methodology may be available before the next permit renewal. Characteristics, and thus toxicity, of the process wastewater may also have been changed during the life of the permit. This screening phase monitoring is important to help determine which test species is most sensitive to the toxicity of the effluent for future compliance monitoring. The proposed conditions in the draft permit for chronic toxicity are based on the Basin Plan narrative WQO for toxicity, Basin Plan effluent limits for chronic toxicity (Basin Plan, Chapter 4), USEPA and SWRCB Task Force guidance, applicable federal regulations [40 CFR 122.44(d)(1)(v)], and BPJ.
- g) Provision E.7. (Effluent Characterization Study): This provision is based on the Basin Plan and the SIP.
- h) Provision E.8. (Ambient Background Receiving Water Study): This provision is based on the Basin Plan and the SIP.
- i) Provision E.19. (Regional Monitoring Program): This provision, which requires the Discharger to continue to participate in the Regional Monitoring Program, is based on the previous Order and the Basin Plan.
- j) Provision E.10. (Pretreatment Program): This provision is based on the Basin Plan and General Pretreatment Regulations at 40 CFR 403.
- k) Provision E.11. (Copper Translator Study and Schedule): This provision allows the Discharger to conduct an optional copper translator study, based on BPJ and the SIP. This provision is based on the need to gather site-specific information in order to apply a different translator from the default translator specified in the CTR and SIP. Without site-specific data, the default translator of 0.83 has been used with the CTR criterion to obtain a total copper objective of 3.7 $\mu\text{g/L}$.
- l) Provision E.12. (Wastewater Facilities, Review and Evaluation, and Status Reports): This provision is based on the previous Order and the Basin Plan.
- m) Provision E.13. (Operations and Maintenance Manual, Review and Status Reports): This provision is based on the Basin Plan, requirements of 40 CFR 122 and the previous permit.
- n) Provision E.14 and 15. (Contingency Plan and Annual Status Reports): The Contingency Plan provision is based on the requirements stipulated in Board Resolution No. 74-10 and the previous permit. The Annual Status Reports are based on the previous permit and the Basin Plan.

- o) Provision E.16. (303(d)-listed Pollutants Site-Specific Objective and TMDL Status Review): This provision requires participation in the development of a TMDL or site-specific objective for copper, nickel, mercury, selenium, 4,4'-DDE, dieldrin, dioxin, and PCBs. By January 31 of each year, the discharger shall submit an update to the Board to document progress made on source control and pollutant minimization measures and development of TMDL or site-specific objective. Regional Board staff shall review the status of TMDL development. This Order may be reopened in the future to reflect any changes required by TMDL development.
- p) Provision E.17. (New Water Quality Objectives): This provision allows future modification of the permit and permit effluent limits as necessary in response to updated WQOs that may be established in the future. This provision is based on 40 CFR 123.
- q) Provision E.18. (Self-Monitoring Program Requirement): The Discharger is required to conduct monitoring of the permitted discharges in order to evaluate compliance with permit conditions. Monitoring requirements are given in the Self Monitoring Program (SMP) of the Permit. This provision requires compliance with the SMP, and is based on 40 CFR 122.44(i), 122.62, 122.63 and 124.5. The SMP is a standard requirement in almost all NPDES permits (including the Order) issued by the Board. In addition to containing definitions of terms, it specifies general sampling/analytical protocols and the requirements of reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and Board's policies. The SMP also contains sampling program specific for the discharger's WWTP. It defines the sampling stations and frequency, pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are specified.
- r) Provision E.19. (Standard Provisions and Reporting Requirements): The purpose of this provision is require compliance with the standard provisions and reporting requirements given in this Board's document titled, Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993, or any amendments thereafter. This document is included as part of the permit as an attachment of the permit. Where provisions or reporting requirements specified in the permit are different from equivalent or related provisions or reporting requirements given in 'Standard Provisions', the specifications given in the permit shall apply. The standard provisions and reporting requirements given in the above document are based on various state and federal regulations with specific references cited therein.
- s) Provision E.20. (Change in Control or Ownership): This provision is based on 40 CFR 122.61.
- t) Provision E.21 and 22. (Permit Reopener and NPDES Permit / USEPA concurrence): This provision is based on 40 CFR 123.
- u) Provision E.23. (Permit Expiration and Reapplication): This provision is based on 40 CFR 122.46 (a).

V. WRITTEN COMMENTS

- Interested persons are invited to submit written comments concerning this draft permit.
- Comments should be submitted to the Board no later than **5:00 P.M. on January 6, 2003**.

- Comments received after this date may not receive full consideration in the formulation of final determinations of permit conditions.
- Comments should be submitted to the Board at the address given on the first page of this fact sheet, and addressed to the attention of: Mr. James Nusrala.

VI. PUBLIC HEARING

- The draft permit will be considered for adoption by the Board at a public hearing during the Board's regular monthly meeting to be held on January 22, 2003, **starting at 9:00 a.m.**
- This meeting will be held at:
**Main Floor Auditorium
Elihu Harris State Office Building,
1515 Clay Street, Oakland, California**

VII. WASTE DISCHARGE REQUIREMENT APPEALS

Any person may petition the State Water Resources Control Board to review the decision of the Board regarding the Waste Discharge Requirements. A petition must be made within 30 days of the Board public hearing.

VIII. ADDITIONAL INFORMATION

For additional information about this matter, interested persons should contact the following Regional Board staff member: Mr. James Nusrala, Phone number: (510) 622-2320, or by email at jn@rb2.swrcb.ca.gov.

Attachments:

- Attachment 1:** RPA Results for Metals, Mercury, and Cyanide
- Attachment 2:** RPA Results for Organic Pollutants
- Attachment 3:** Calculation of Effluent Concentration Limits
- Attachment 4:** Calculation of Mercury Mass Limit
- Attachment 5:** Copper Interim Performance-Based Limit Calculation
- Attachment 6:** Copper Infeasibility Worksheet
- Attachment 7:** Mercury Infeasibility Worksheet
- Attachment 8:** Salinity Analysis
- Attachment 9:** Statistical Analysis of Pooled Data From Regionwide Ultraclean Mercury Sampling For Municipal Dischargers (available online)
- Attachment 10:** Summary of Near Shore Overflows – WQCP
- Attachment 11:** Summary of Compliance with Cease & Desist Order

Attachment 1

CITIES OF SOUTH SAN FRANCISCO AND SAN BRUNO
DRAFT REASONABLE POTENTIAL ANALYSIS METALS
1999-2001 DATA
JANUARY 2003
(all values in ug/L unless otherwise specified)

Year	month	As	Cd	Cr	Cu	Pb	Hg	Ni	Se	Se*CV	Ag	Ag*CV	Zn	Cyanide
1999	JAN	< 2	< 0.5	< 5	10	0.95	0.022	< 5	< 4	2	0.95	0.95	33	< 3
	FEB	< 4	< 1	< 10	10	< 1	0.01	< 10	< 8	4	< 1	0.5	49	< 3
	MAR	< 2	< 1	< 10	16	1.5	< 0.01	< 10	< 8	4	< 1	0.5	55	7
	APR	< 2	< 0.5	< 5	5	< 2	< 0.2	9	< 2	1	< 0.5	0.25	34	< 7.5
	MAY	2.1	0.05	9	9.6	0.71	< 0.2	12.3	4	4	0.48	0.48	52.8	< 3
	JUNE	0.5	0.04	4	8.6	0.8	0.022	8	1	1	1.8	1.8	42	13
	JULY	1	0.31	4.6	10.5	1.36	0.048	9.9	< 1	0.5	1.42	1.42	92	8
	AUG	< 0.5	< 0.02	1.4	4.9	1.36	0.026	1.2	< 1	1	0.2	0.2	36.7	12
	SEPT	< 0.5	< 0.02	0.9	3.7	0.64	0.017	1.2	< 0.5	0.25	0.3	0.3	23.8	7
	OCT	0.5	0.06	1.1	6.3	0.66	0.011	2.6	< 0.1	0.05	0.29	0.29	37	5
	NOV	< 0.5	< 0.02	1.4	5.2	0.68	0.02	1.7	< 1	0.5	0.29	0.29	40	< 3
	DEC	< 0.5	0.02	1.5	5.1	0.68	0.018	1.5	< 1	0.5	0.65	0.65	36	8
2000	JAN	< 0.5	0.03	1.1	6.2	0.57	0.027	1.5	< 1	0.5	1.02	1.02	39	6
	FEB	< 0.5	0.02	1.9	7.4	1.1	0.021	1.1	< 1	0.5	0.75	0.75	51	6
	MAR	< 0.5	0.18	3.8	17.1	3.51	0.028	2.9	< 1	0.5	2.64	2.64	45	6
	APR	< 1	< 0.04	1.3	9.1	0.73	0.021	1.3	< 1	0.5	0.5	0.5	48	< 3
	MAY	0.7	< 0.02	1.1	8.6	0.77	0.023	2.2	< 1	0.5	0.78	0.78	39	4
	JUNE	< 0.5	< 0.05	1.2	1.6	0.28	0.01	0.5	< 1	0.5	0.31	0.31	36	5
	JULY	< 0.5	< 0.02	0.8	7.5	0.48	0.016	1.7	< 1	0.5	0.3	0.3	32	3
	AUG	< 1	< 0.1	< 0.4	7.3	0.71	0.017	2.5	< 2	1	< 0.5	0.25	39	36
	SEPT	< 0.5	0.03	1.3	9.7	0.56	0.023	2.3	< 1	0.5	0.32	0.32	36	9
	OCT	< 0.5	0.11	0.8	3.5	0.7	0.012	1.6	< 1	0.5	0.17	0.17	34	12
	NOV	1.6	0.07	3.7	4.3	0.33	0.015	5.3	4	4	0.16	0.16	16.9	5
	DEC	2	0.3	< 0.5	7	4	0.024	11.8	< 5	2.5	4	2	32	10
2001	JAN	< 5	0.15	6.8	32.7	2.36	0.026	11.2	< 5	2.5	0.5	0.5	55.3	< 5
	FEB	2.9	0.07	< 5	9.6	0.56	0.019	10.5	< 1	0.5	0.33	0.33	45.7	10
	MAR	2.4	0.8	< 5	13	1.34	0.025	9.3	< 1	0.5	0.3	0.3	73.2	8
	APR	1.5	< 0.05	3.4	10.4	0.61	0.02	10.1	< 5	2.5	0.22	0.22	35.4	< 10
	MAY	1.2	0.07	5.6	8.8	0.57	0.016	9.7	< 2	1	0.33	0.33	30.8	< 10
	JUNE	2	0.12	2.3	10.5	0.59	0.016	9	4	4	0.66	0.66	44.6	10
	JULY	< 2.5	< 0.25	1	9.6	0.4	0.012	4	5	5	0.1	0.1	29.3	10
	AUG	2	< 0.05	2	11.7	0.93	0.021	7	< 2	1	0.67	0.67	41.5	10
	SEPT	3	0.05	2	11.7	0.5	0.014	6.3	< 2	1	0.46	0.46	45.6	< 5
	OCT	3.2	0.27	< 4	11	0.74	0.011	5.4	< 2	1	0.33	0.33	36.8	< 5
	NOV	2.1	0.05	2.2	9.6	0.58	0.015	5.9	5	5	0.44	0.44	47.5	< 5
	DEC	2.6	0.15	1.4	5.5	0.76	0.007	5.7	< 5	2.5	0.17	0.17	42	112
Number of Points		36	36	36	36	36	36	36	36	36	36	24	36	36
Average (ug/L)		1.564	0.183	3.125	9.1194	1.0006	0.029	5.589	2.517	1.592	0.69	0.7013	41.858	10.681
Standard Deviation		1.136	0.262	2.628	5.2314	0.8087	0.043	3.828	2.099	1.506	0.7614	0.6496	13.195	18.26
Average Plus 3 SD		4.97	0.97	11.01	24.81	3.43	0.16	17.07	8.81	6.11	2.97	2.65	81.44	65.46
Coeff. Variance		0.73	1.43	0.84	0.57	0.83	1.47	0.69	0.83	0.95	1.10	0.93	0.32	1.71
Min (ug/L)		0.50	0.02	0.40	1.60	0.28	0.01	0.50	0.10		0.10		16.90	3.00
Max, or lowest														
Detection Limit if all														
ND (ug/L) (MEC)		3.20	0.80	9.00	32.70	4.00	0.05	12.30	5.00		2.64		92.00	36.00

CITIES OF SOUTH SAN FRANCISCO AND SAN BRUNO
DRAFT REASONABLE POTENTIAL ANALYSIS METALS
1999-2001 DATA
JANUARY 2003
(all values in ug/L unless otherwise specified)

	year	month	As	Cd	Cr	Cu	Pb	Hg	Ni	Se	Se*CV	Ag	Ag*CV	Zn	Cyanide
Basin Plan Water Quality Objectives ²															
1-hr avg (WQO1); daily avg.	69	43	1100	4.9	140	2.1									5
4-day avg (WQO4); monthly avg.	36	9.3	50		5.6	0.025			140			2.3		170	
Instant. Max (WQOI)									7.1					58	
24-hr avg. (WQO24)															
Objectives for Human Health (HH)									4600						
CTR Objectives ²															
Criterion Max Conc. (CMC)	69	42	1100	5.78	220				74	5		2.24		95	1
Criterion Continuous Conc. (CCC)	36	9.3	50	3.7	8.5				8.3	5				85	1
Objectives for Human Health (HH)								0.051							220000
Most stringent Water Quality Objective-C	36	9.3	50	3.7	5.6	0.025			7.1	5		2.24		58	1
Is MEC > C?	No	No	No	Yes	No	Yes			Yes	Yes		Yes		Yes	Yes
Max Observed															
Central Bay RMP Sites (B) ³	2.220	0.127	4.400	2.455	0.804	0.006			3.500	0.190		0.068		4.60	NA
Is B > C?	No	No	No												
Reasonable Potential?	No	No	No	Yes	No	Yes			Yes	Yes		Yes		Yes	Yes
Existing Permit Limit (Monthly Average /Daily Maximum)	/ 20	/ 30	/ 110	/ 37	/ 53	0.21/1			/ 65	/ 50		/ 23		/ 500	/ 10
Interim Monthly Average / Daily Maximum Limit ⁴				/ 37		0.087/1									
Final Monthly Average / Daily Maximum Limit ⁵				12/24		.019//.045			31//68	2//5		5//22		483//500	
Notes:															
1. CV = 0.6 for data set of less than ten points															
2. Basin Plan and California Toxic Rule Water Quality Objectives Derived from Saltwater Criteria															
3. Background concentrations for metals are the maximum observed from the Yerba Buena Island and Richardson Bay stations from the Regional Monitoring Program (1992-1998).															
4. Interim Limits are the lower of performance based limits and existing permit limits.															
5. Final Limits are the lower of the SIP-calculated limits and existing permit limits.															

Attachment 2

SOUTH SAN FRANCISCO - SAN BRUNO WATER QUALITY CONTROL PLANT
DRAFT REASONABLE POTENTIAL ANALYSIS
TOXIC POLLUTANTS
JANUARY 2003
(all values in micrograms per liter unless otherwise denoted)

# in CTR	ORGANICS 2,3,7,8-TCDD (Dioxin) (303(d) listed) (All values in pg/L) ¹	Water Quality Objectives		Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7
		Saltwater	Human Health	Blank space	Effluent Data range; if NA, RP lowest WQO	incomplete discharger data max detected, or if all ND, and any DL< WQO, then lowest det. limit)	MEC> WQO? (yes-Y RP)	bkgrnd	bkgrnd > WQO? (no-N RP, yes-Y RP, NA=bkgrnd not available, B=bkgrnd)	Final or Interim limit (Yes if any yeses in left columns)
16	Acrylonitrile		0.014	0.014			NA	NA	NA	
17	Acrolein		780	780		NA	NA	NA	Ud	
18	Acrylonitrile		0.66	0.66		NA	NA	NA	Ud	
19	Benzene		71	71		1	NA	NA	NA	
20	Bromoform		360	360		1	NA	NA	NA	
21	Carbon Tetrachloride		4.4	4.4		1	NA	NA	NA	
22	Chlorobenzene		21000	21000		1	NA	NA	NA	
23	Chlorobromomethane		34	34		1	NA	NA	NA	
24	Chloroethane					5	NA	NA	B & Obj NA	Uo
25	2-Chloroethylvinyl Ether					NA	NA	NA	B & Obj NA	Uo, Ud
26	Chloroform		46	46		4	NA	NA	B & Obj NA	Uo
27	Dichlorobromomethane		46			1	NA	NA	NA	N
28	1,1-Dichloroethane		99	99		1	NA	NA	B & Obj NA	Uo
29	1,2-Dichloroethane		3.2	3.2		1	N	NA	NA	N
30	1,1-Dichloroethylene		39	39		1	N	NA	NA	N
31	1,2-Dichloropropane		1700	1700		1	N	NA	NA	N
32	1,3-Dichloropropylene		29000	29000		1	N	NA	NA	N
33	Ethylbenzene		4000	4000		5	N	NA	NA	N
34	Methyl Bromide		n			5	NA	NA	B & Obj NA	Uo
35	Methyl Chloride		1600	1600		65	N	NA	NA	N
36	Methylene Chloride		11	11		1	N	NA	NA	N
37	1,1,2,2-Tetrachloroethane		11			1	N	NA	NA	N
38	Tetrachloroethylene		8.85	8.85		19	Y	NA	NA	Yes
39	Toluene		200000	200000		3	N	NA	NA	N
40	1,2-Trans-Dichloroethylene		140000	140000		1	N	NA	NA	N
41	1,1,1-Trichloroethane		n			1	N	NA	B & Obj NA	Uo
42	1,1,2-Trichloroethane		42	42		1	N	NA	NA	N
43	Trichloroethylene		81	81		1	N	NA	NA	N
44	Vinyl Chloride		525	525		1	N	NA	NA	N
45	Chlorophenol		400	400		2	N	NA	NA	N
46	2,4-Dichlorophenol		790	790		1	N	NA	NA	N
47	2,4-Dimethylphenol		2300	2300		2	N	NA	NA	N
48	2-Methyl-4,6-Dinitrophenol		765	765		2	N	NA	NA	N
49	2,4-Dinitrophenol		14000	14000		2	N	NA	NA	N
50	2-Nitrophenol					2	NA	NA	B & Obj NA	Uo
51	4-Nitrophenol					2	NA	NA	B & Obj NA	Uo
52	3-Methyl-4-Chlorophenol					2	NA	NA	B & Obj NA	Uo
53	Pentachlorophenol		8.2	7.9		2	N	NA	NA	N
54	Phenol		4600000	4600000		880	N	NA	NA	N
55	2,4,6-Trichlorophenol		6.5	6.5		2	N	NA	NA	N
56	Acenaphthene		2700	2700		0.1	N	0.0015	no	N
57	Acenaphthylene					0.1	NA	0.00053	Obj NA	Uo

SOUTH SAN FRANCISCO - SAN BRUNO WATER QUALITY CONTROL PLANT
DRAFT REASONABLE POTENTIAL ANALYSIS
TOXIC POLLUTANTS

JANUARY 2003
(all values in micrograms per liter unless otherwise denoted)

		Water Quality Objectives			Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7				
# in CTR	ORGANICS	Salvwater	Human Health	Organisms only	Blank space	=	incomplete discharger data								
		CMC (ug/L)	CCC		lowest WQO	Effluent Data range: if NA, RP det by bckgrd	Detection Limit	max detected, or if all ND, and any DL< WQO, then lowest det. limit	MEC > WQO? (yes=Y RP)	bckgrd	bckgrd > WQO? (no=N RP, yes=Y RP, NA=bckgrd not available, B=bckgrd)	RP? (Y,N, U= Undetermined)	Final or Interim limit (Yes if any yeses in left columns)	Final Effluent Limit (monthly average/ daily max)	
58	Anthracene			110000				0.02	N	0.0005	no	N			
59	Benidine			0.00054				NA	NA	NA	NA	N			
60	Benzo(a)Anthracene			0.049				0.02	N	0.0053	no	N			
61	Benzo(a)Pyrene			0.049				0.03	N	0.0025	no	N			
62	Benzo(b)Fluoranthene			0.049				0.03	N	0.0046	no	N			
63	Benzo(ghi)Perylene							0.02	N	0.006	Obj NA	Uo			
64	Benzo(k)Fluoranthene			0.049				0.02	N	0.0015	no	N			
65	Bis(2-Chloroethoxy)Methane							NA	NA	NA	B & Obj NA	Uo			
66	Bis(2-Chloroethyl)Ether			1.4				NA	NA	NA	NA	N			
67	Bis(2-Chloroisopropyl)Ether			170000				1	N	NA	NA	N			
68	Bis(2-Ethylhexyl)Phthalate			5.9				2	N	NA	NA	N			
69	4-Bromophenyl Phenyl Ether							NA	NA	NA	B & Obj NA	Uo			
70	Butylbenzyl Phthalate			5200				4	N	NA	NA	N			
71	2-Chloronaphthalene			4300				1	N	NA	NA	N			
72	4-Chlorophenyl Phenyl Ether							NA	NA	NA	B & Obj NA	Uo			
73	Chrysene			0.049				0.04	N	0.0041	no	N			
74	Dibenzo(a,h)Anthracene			0.049				0.02	N	0.0006	no	N			
75	1,2 Dichlorobenzene			17000				1	N	NA	NA	N			
76	1,3 Dichlorobenzene			2600				1	N	NA	NA	N			
77	1,4 Dichlorobenzene			2600				1	N	NA	NA	N			
78	3,3'-Dichlorobenzidine			0.077				NA	NA	NA	NA	N			
79	Diethyl Phthalate			120000				1	N	NA	NA	N			
80	Dimethyl Phthalate			2900000				1	N	NA	NA	N			
81	Di-n-Butyl Phthalate			12000				1	N	NA	NA	N			
82	2,4-Dinitrotoluene			9.1				1	N	NA	NA	N			
83	2,6-Dinitrotoluene							NA	NA	NA	Obj NA	Uo			
84	Di-n-Octyl Phthalate							NA	NA	NA	Obj NA	Uo			
85	1,2-Diphenylhydrazine			0.54				NA	NA	NA	Obj NA	Uo			
86	Fluoranthene			370				1.5	N	0.007	no	N			
87	Fluorene			14000				0.03	N	0.002078	no	N			
88	Hexachlorobenzene			0.00077				NA	NA	NA	NA	N			
89	Hexachlorobutadiene			50				1	N	NA	NA	N			
90	Hexachlorocyclopentadiene			17000				1	N	NA	NA	N			
91	Hexachloroethane			8.9				1	N	NA	NA	N			
92	Indeno(1,2,3-cd) Pyrene			0.049				0.02	N	0.004	no	N			
93	Isophorone			600				2	N	NA	NA	N			
94	Naphthalene							0.3	NA	0.00229	Obj NA	Uo			
95	Nitrobenzene			1900				1	N	NA	NA	N			
96	N-Nitrosodimethylamine			8.1				NA	NA	NA	NA	Ud			
97	N-Nitrosodi-n-Propylamine			1.4				1	N	NA	NA	N			
98	N-Nitrosodiphenylamine			16				1	N	NA	NA	N			
99	Phenanthrene							0.23	NA	0.0061	Obj NA	Uo			
100	Pyrene			11000				0.14	N	0.0051	no	N			

SOUTH SAN FRANCISCO - SAN BRUNO WATER QUALITY CONTROL PLANT
DRAFT REASONABLE POTENTIAL ANALYSIS
TOXIC POLLUTANTS
JANUARY 2003
(all values in micrograms per liter unless otherwise denoted)

# in CTR	ORGANICS	Water Quality Objectives		Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7
		Saltwater	Human Health	Blank space		incomplete discharger data				
		CMC (ug/L)	CCC	Organisms only	Effluent Data range; if NA, RP det by backgrd	Detection Limit	MBC > WQO? (yes=Y RP)	backgrd	backgrd > WQO? (no=N RP, yes=Y RP, NA=backgrd not available, B=backgrd)	Final or Interim limit (Yes if any yeses in left columns)
101	1,2,4-Trichlorobenzene						NA	NA	NA	Uo
102	Aldrin	1.3		0.00014			NA	NA	NA	N
103	alpha-BHC			0.013			NA	NA	NA	N
104	beta-BHC			0.046			NA	NA	NA	N
105	gamma-BHC	0.16		0.063			NA	NA	NA	N
106	delta-BHC						0.04	NA	NA	Uo
107	Chlordane	0.09	0.004	0.00059			NA	NA	NA	Uo
108	4,4-DDT	0.13	0.001	0.00059			NA	0.000066	no	N
109	4,4-DDE			0.00059			NA	0.00069	yes	Yes
110	4,4-DDD			0.00084			NA	0.000313	no	N
111	Dieldrin (303(d) listed)	0.71	0.0019	0.00014			NA	0.000264	yes	Yes
112	alpha-Endosulfan	0.034	0.0087	240			NA	0.000031	no	N
113	beta-Endosulfan	0.034	0.0087	240			NA	0.000069	no	N
114	Endosulfan Sulfate			240			0.04	0.000011	no	N
115	Endrin	0.037	0.0023	0.81			NA	0.000016	no	N
116	Endrin Aldehyde			0.81			0.04	NA	NA	N
117	Heptachlor	0.053	0.0036	0.00021			NA	0.000019	no	N
118	Heptachlor Epoxide	0.053	0.0036	0.00011			NA	0.000094	no	N
119-125	PCBs		0.03	0.00017			NA	??	??	N
126	Toxaphene	0.21	0.0002	0.00075			NA	NA	NA	N
	Tributyltin						0.045	Yes	NA	Yes
	TBT #s for CV								NA	0.2/0.37

1. Dioxin samples are non-detect for all congeners for the November 99 and March 2000 samples. Dioxin samples are non-detect for only 2,3,7,8-TCDD congener for all other sample dates.

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# in CTR	ORGANICS 2,3,7,8-TCDD (Dioxin) (303(d) listed) (All values in pg/L) ¹	2/1/1999	8/3/1999	3/24/2000	8/1/2000	2/2/2001	8/7/2001
16	Acrolein	na	na	na	na	na	na
17	Acrylonitrile	na	na	na	na	na	na
18	Benzene	< 5	< 1	< 1	< 1	< 1	< 1
19	Bromoform	< 5	< 1	< 1	< 1	< 1	< 1
20	Carbon Tetrachloride	< 5	< 1	< 1	< 1	< 1	< 1
21	Chlorobenzene	< 5	< 1	< 1	< 1	< 1	< 1
22	Chlorobenzene	< 5	< 1	< 1	< 1	< 1	< 1
23	Chlorobromomethane	< 5	< 1	< 1	< 1	< 1	< 1
24	Chloroethane	< 5	< 5	< 5	< 5	< 5	< 5
25	2-Chloroethylvinyl Ether	na	na	na	na	na	na
26	Chloroform	< 5	< 3	< 1	< 4	< 3	< 1
27	Dichlorobromomethane	< 5	< 1	< 1	< 1	< 1	< 1
28	1,1-Dichloroethane	< 5	< 1	< 1	< 1	< 1	< 1
29	1,2-Dichloroethane	< 5	< 1	< 1	< 1	< 1	< 1
30	1,1-Dichloroethylene	< 5	< 1	< 1	< 1	< 1	< 1
31	1,2-Dichloropropane	< 5	< 1	< 1	< 1	< 1	< 1
32	1,3-Dichloropropylene	< 5	< 1	< 1	< 1	< 1	< 1
33	Ethylbenzene	< 5	< 1	< 1	< 1	< 1	< 1
34	Methyl Bromide	< 5	< 5	< 5	< 5	< 5	< 5
35	Methyl Chloride	< 5	< 5	< 5	< 5	< 5	< 5
36	Methylene Chloride	< 5	< 3	< 50	< 65	< 50	< 50
37	1,1,2,2-Tetrachloroethane	< 5	< 1	< 1	< 1	< 1	< 1
38	Tetrachloroethylene	< 5	< 1	< 1	< 19	< 1	< 1
39	Toluene	< 5	< 1	< 1	< 1	< 3	< 2
40	1,2-Trans-Dichloroethylene	< 5	< 1	< 1	< 1	< 1	< 1
41	1,1,1-Trichloroethane	< 5	< 1	< 1	< 1	< 1	< 1
42	1,1,2-Trichloroethane	< 5	< 1	< 1	< 1	< 1	< 1
43	Trichloroethylene	< 5	< 1	< 1	< 1	< 1	< 1
44	Vinyl Chloride	< 5	< 5	< 1	< 1	< 1	< 1
45	Chlorophenol	< 5	< 2	< 2	< 2	< 2	< 2
46	2,4-Dichlorophenol	< 5	< 2	< 2	< 2	< 2	< 2
47	2,4-Dimethylphenol	< 5	< 2	< 2	< 2	< 2	< 2
48	2-Methyl-4,6-Dinitrophenol	< 20	< 10	< 10	< 10	< 2	< 2
49	2,4-Dinitrophenol	< 20	< 10	< 10	< 10	< 2	< 2
50	2-Nitrophenol	< 5	< 2	< 2	< 2	< 2	< 2
51	4-Nitrophenol	< 5	< 10	< 10	< 10	< 2	< 2
52	3-Methyl-4-Chlorophenol	< 5	< 5	< 5	< 5	< 2	< 2
53	Pentachlorophenol	< 20	< 10	< 10	< 10	< 2	< 2
54	Phenol	< 5	< 880	< 5	< 5	< 5	< 5
55	2,4,6-Trichlorophenol	< 5	< 2	< 2	< 2	< 2	< 2
56	Acenaphthene	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 1
57	Acenaphthylene	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 1

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# in CTR	ORGANICS	2/1/1999	8/3/1999	3/21/2000	8/1/2000	2/2/2001	8/7/2001
58	Anthracene	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1
59	Benzidine	< 50	na	na	na	na	na
60	Benzo(a)Anthracene	0.02	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
61	Benzo(a)Pyrene	0.03	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
62	Benzo(b)Fluoranthene	0.03	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
63	Benzo(ghi)Perylene	0.02	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
64	Benzo(k)Fluoranthene	0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1
65	Bis(2-Chloroethoxy)Methan	< 5	< 5	< 5	< 5	< 1	< 1
66	Bis(2-Chloroethyl)Ether	< 5	< 2	< 2	< 2	< 2	< 2
67	Bis(2-Chloroisopropyl)Ether	< 5	< 2	< 2	< 2	< 1	< 1
68	Bis(2-Ethylhexyl)Phthalate	< 10	< 5	< 5	< 5	< 2	< 1
69	4-Bromophenyl Phenyl Ether	< 5	< 5	< 5	< 5	< 1	< 1
70	Butylbenzyl Phthalate	< 5	< 2	< 2	< 2	< 1	< 1
71	2-Chloronaphthalene	< 5	< 2	< 2	< 2	< 1	< 1
72	4-Chlorophenyl Phenyl Ether	< 5	< 2	< 2	< 2	< 1	< 1
73	Chrysene	0.04	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
74	Dibenzo(a,h)Anthracene	0.02	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
75	1,2-Dichlorobenzene	< 5	< 2	< 2	< 1	< 1	< 1
76	1,3-Dichlorobenzene	< 5	< 2	< 2	< 1	< 1	< 1
77	1,4-Dichlorobenzene	< 5	< 2	< 2	< 1	< 1	< 1
78	3,3'-Dichlorobenzidine	< 40	< 5	< 5	< 5	< 5	< 2
79	Diethyl Phthalate	< 5	< 5	< 5	< 5	< 1	< 1
80	Dimethyl Phthalate	< 10	< 5	< 5	< 5	< 1	< 1
81	Di-n-Butyl Phthalate	< 5	< 5	< 5	< 5	< 1	< 1
82	2,4-Dinitrotoluene	< 5	< 2	< 2	< 2	< 1	< 1
83	2,6-Dinitrotoluene	< 5	< 5	< 5	< 5	< 1	< 1
84	Di-n-Octyl Phthalate	< 5	< 5	< 5	< 5	< 2	< 2
85	1,2-Diphenylhydrazine	na	na	na	na	na	na
86	Fluoranthene	1.5	< 0.2	< 0.15	< 0.15	< 0.15	< 0.2
87	Fluorene	0.03	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
88	Hexachlorobenzene	< 5	< 2	< 2	< 2	< 1	< 1
89	Hexachlorobutadiene	< 5	< 2	< 2	< 2	< 1	< 1
90	Hexachlorocyclopentadiene	< 5	< 2	< 2	< 2	< 1	< 1
91	Hexachloroethane	< 5	< 2	< 2	< 2	< 1	< 1
92	Indeno(1,2,3-cd) Pyrene	< 0.02	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
93	Isophorone	< 5	< 2	< 2	< 2	< 2	< 2
94	Naphthalene	0.3	< 0.1	< 0.1	< 0.15	< 0.15	< 1
95	Nitrobenzene	< 5	< 2	< 2	< 2	< 1	< 1
96	N-Nitrosodimethylamine	na	na	na	na	na	na
97	N-Nitrosodi-n-Propylamine	< 5	< 2	< 2	< 2	< 1	< 1
98	N-Nitrosodiphenylamine	< 5	< 2	< 2	< 2	< 1	< 1
99	Phenanthrene	0.23	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
100	Pyrene	0.14	< 0.15	< 0.15	< 0.15	< 0.1	< 0.2

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# in CTR	ORGANICS	2/1/1999	8/3/1999	3/21/2000	8/1/2000	2/2/2001	8/7/2001
101	1,2,4-Trichlorobenzene	< 5	< 2	< 2	< 1	< 1	< 1
102	Aldrin	< 0.05	< 0.08	< 0.08	< 0.08	< 0.06	< 0.04
103	alpha-BHC	< 0.05	< 0.06	< 0.06	< 0.06	< 0.06	< 0.04
104	beta-BHC	< 0.05	< 0.06	< 0.06	< 0.06	< 0.06	< 0.04
105	gamma-BHC	< 0.05	< 0.06	< 0.06	< 0.06	< 0.06	< 0.04
106	delta-BHC	< 5	< 0.06	< 0.06	< 0.06	< 0.06	< 0.04
107	Chlordane	< 0.3	< 1	< 1	< 1	< 1	< 0.02
108	4,4-DDT	< 0.05	< 0.2	< 0.2	< 0.2	< 0.06	< 0.04
109	4,4-DDE	< 0.05	< 0.08	< 0.08	< 0.08	< 0.08	< 0.04
110	4,4-DDD	< 0.05	< 0.1	< 0.1	< 0.1	< 0.06	< 0.04
111	Dieldrin (303(d) listed)	< 0.05	< 0.06	< 0.06	< 0.06	< 0.06	< 0.04
112	alpha-Endosulfan	< 0.05	< 0.1	< 0.1	< 0.1	< 0.06	< 0.04
113	beta-Endosulfan	< 0.05	< 0.1	< 0.1	< 0.1	< 0.06	< 0.04
114	Endosulfan Sulfate	< 0.05	< 0.2	< 0.2	< 0.2	< 0.06	< 0.04
115	Endrin	< 0.05	< 0.4	< 0.4	< 0.4	< 0.06	< 0.04
116	Endrin Aldehyde	< 0.05	< 0.2	< 0.2	< 0.2	< 0.06	< 0.04
117	Heptachlor	< 0.05	< 0.06	< 0.06	< 0.06	< 0.06	< 0.04
118	Heptachlor Epoxide	< 0.2	< 0.1	< 0.1	< 0.1	< 0.06	< 0.04
119-125	PCBs	< 7.9	< 1.3	< 1.3	< 1.3	< 0.5	< 0.2
126	Toxaphene	< 5	< 1	< 1	< 1	< 1	< 0.06
	Tributyltin	0.002	< 0.002	< 0.002	na	0.011	0.045
	TBT #'s for CV						

Attachment 3

Constituent	C, ug/L	B, ug/L	B > C	CV	D	ECA, ug/L	Sigma	ECA Mult.	LTA	Lowest LTA	AMEL Mult.	MDEL Mult.	AML Limit	MDL Limit
METALS														
Silver														
acute	2.3	0.068	No	0.93	9	22.388	0.79	0.22	4.87	4.87	1.00	4.59	4.87	22.39
chronic				0.093										
Zinc														
acute	170	4.6	No	0.32	9	1658.6	0.31	0.51	842.37	376.83	1.28	1.97	483.33	741.97
chronic	58	4.6	No	0.32	9	538.6	0.16	0.70	376.83					
Copper														
acute	5.78	2.46	No	0.57	9	35.66	0.53	0.335	11.95	8.07	1.52	2.98	12.3	24.1
chronic	3.7	2.46	No	0.57	9	14.86	0.28	0.543	8.07					
Mercury														
acute	2.1	0.006	No	0.87	0	2.10	0.75	0.23	0.49	0.01	1.82	4.32	0.019	0.045
chronic	0.025	0.006	No	0.87	0	0.03	0.42	0.41	0.01					
Nickel														
acute	140	3.5	No	0.71	9	1368.50	0.64	0.28	379.74	18.81	1.66	3.60	31.2	67.8
chronic	7.1	3.5	No	0.71	9	39.50	0.34	0.48	18.81					
Selenium														
acute	5	0.19	No	0.95	0	5.00	0.80	0.21	1.07	1.07	1.90	4.68	2.03	5.00
chronic	5	0.19	No	0.95	0	5.00	0.45	0.39	1.94					
4,4-DDE														
Human Health	0.00059	0.00012	no	0.6	0	0.00059							0.00059	0.00118
Dieldrin														
acute	0.71000	0.00026	no											
chronic	0.00190	0.00026	no											
human health	0.00014	0.00010	no	0.6	0	0.00014							0.00014	0.00028
Tributyltin														
acute	0.370		no	0.6	0	0.370	0.555	0.321	0.119	0.005	1.552	3.114	0.008	0.016
chronic	0.010		no	0.6	0	0.010	0.294	0.527	0.005					
Tetrachloroethylene														
Human Health	8.85			0.6	9	88.5							88.5	177

Attachment 4

Mercury Mass Limit
South San Francisco and San Bruno Waste Treatment Plant -
1999-2001 data
January 2003

January 2000				
MERCURY MASS LIMIT (1)				
Date	Total Flow. MGD	[Hg], ug/l	Mass = Flow x [Hg]; g/d (2)	MA [Hg] Mass Load = Flow x [Hg]; g/d (3)
Jan-99	10.5	0.022	0.872	
Feb-99	12.8	0.010	0.486	
Mar-99	10.8	0.010	0.410	
Apr-99	10.6	0.200	8.039	
May-99	9.5	0.200	7.154	
Jun-99	9.4	0.022	0.779	
Jul-99	9.3	0.048	1.688	
Aug-99	9.3	0.026	0.916	
Sep-99	9.5	0.017	0.609	
Oct-99	9.5	0.011	0.395	
Nov-99	9.7	0.020	0.737	
Dec-99	9.4	0.018	0.638	1.894
Jan-00	11.1	0.027	1.135	1.916
Feb-00	14.0	0.021	1.112	1.968
Mar-00	11.4	0.028	1.203	2.034
Apr-00	10.4	0.021	0.827	1.433
May-00	10.1	0.023	0.877	0.910
Jun-00	10.1	0.010	0.380	0.877
Jul-00	10.0	0.016	0.603	0.786
Aug-00	10.0	0.017	0.643	0.763
Sep-00	10.1	0.023	0.877	0.786
Oct-00	10.4	0.012	0.470	0.792
Nov-00	10.0	0.015	0.567	0.778
Dec-00	9.8	0.024	0.888	0.799
Jan-01	10.93	0.026	1.076	0.794
Feb-01	12.62	0.019	0.908	0.777
Mar-01	10.79	0.025	1.021	0.761
Apr-01	10.05	0.02	0.761	0.756
May-01	9.44	0.016	0.572	0.730
Jun-01	9.47	0.016	0.574	0.747
Jul-01	9.35	0.012	0.425	0.732
Aug-01	9.38	0.021	0.746	0.740
Sep-01	9.35	0.014	0.495	0.708
Oct-01	9.29	0.011	0.387	0.702
Nov-01	9.86	0.015	0.560	0.701
Dec-01	13.28	0.007	0.352	0.656
Avg	10.3			
	Count, n			25.000
	Maximum MA value, g/d			2.034
	Maximum mass, kg/mo			0.062
	Average Moving Average Load			0.981
	Standard Deviation MA Load			0.456
	99.7 %tile			2.029
	Ave + 3SD, g/d			2.350
	Ave + 3SD, kg/mo			0.071
	Mercury Mass Emission Limit =			0.071 kg/month
Example:	2.4 g/d (kg/1000g)(30.42 d/mo) = 0.71 kg/mo			
Notes:				
(1) Information from the Annual Reports and Self-Monitoring Reports				
(2) The mass in g/d is the product of the flow, concentration, and a multiplier of 3.785.				
(3) MA [Hg] load in g/d is the moving average mercury load in grams per day. This calculation is the average of the previous 12 data points.				

Attachment 5

Date	Copper, ug/l
Jan-99	10
Feb-99	10
Mar-99	16
Apr-99	5
May-99	9.6
Jun-99	8.6
Jul-99	10.5
Aug-99	4.9
Sep-99	3.7
Oct-99	6.3
Nov-99	5.2
Dec-99	5.1
Jan-00	6.2
Feb-00	7.4
Mar-00	17.1
Apr-00	9.1
May-00	8.6
Jun-00	1.6
Jul-00	7.5
Aug-00	7.3
Sep-00	9.7
Oct-00	3.5
Nov-00	4.3
Dec-00	7
Jan-01	32.7
Feb-01	9.6
Mar-01	13
Apr-01	10.4
May-01	8.8
Jun-01	10.5
Jul-01	9.6
Aug-01	11.7
Sep-01	11.7
Oct-01	11
Nov-01	9.6
Dec-01	5.5

Copper, sorted ug/l	LN(Cu)	RANK	Probability
1.6	0.47	1	1.7
3.5	1.25	2	4.5
3.7	1.31	3	7.2
4.3	1.46	4	10.0
4.9	1.59	5	12.8
5	1.61	6	15.5
5.1	1.63	7	18.3
5.2	1.65	8	21.0
5.5	1.70	9	23.8
6.2	1.82	10	26.6
6.3	1.84	11	29.3
7	1.95	12	32.1
7.3	1.99	13	34.8
7.4	2.00	14	37.6
7.5	2.01	15	40.3
8.6	2.15	16	43.1
8.6	2.15	17	45.9
8.8	2.17	18	48.6
9.1	2.21	19	51.4
9.6	2.26	20	54.1
9.6	2.26	21	56.9
9.6	2.26	22	59.7
9.6	2.26	23	62.4
9.7	2.27	24	65.2
10	2.30	25	67.9
10	2.30	26	70.7
10.4	2.34	27	73.4
10.5	2.35	28	76.2
10.5	2.35	29	79.0
11	2.40	30	81.7
11.7	2.46	31	84.5
11.7	2.46	32	87.2
13	2.56	33	90.0
16	2.77	34	92.8
17.1	2.84	35	95.5
32.7	3.49	36	98.3

Regression Statistics Normal	
Multiple R	
R Square	0.65
Adjusted R Square	
Standard Error	
Observations	36
Regression Statistics Lognormal	
Multiple R	
R Square	0.83789827
Adjusted R Square	
Standard Error	
Observations	36

Calculation of Performance-based Interim Concentration Limit			
Statistic	Cu ug/L	LN(Cu)	Previous Permit
Average	9.12	2.08	
SD	5.23137892	0.523462	
Best Fit (R ²)*	0.65	0.840	
avg+3SD	24.81	38.5	37

* R² reflects a regression analysis of the data set as plotted along a line the higher the R², the better fit the data is along a line.
The higher R² will determine the better statistical analysis to determine the performance-based limit

The appropriate interim effluent limit as calculated above is 38.5 ug/L
The interim effluent limit is the lower of the previous permit
or treatment plant performance (with the best statistical fit).

Attachment 6

Copper Infeasibility Analysis

copper Infeasibility Analysis

Date	Rank	[Cu]	LN [Cu]
Jun-00	1	1.6	0.4700036
Oct-00	2	3.5	1.252763
Sep-99	3	3.7	1.3083328
Nov-00	4	4.3	1.458615
Aug-99	5	4.9	1.5892352
Apr-99	6	5	1.6094379
Dec-99	7	5.1	1.6292405
Nov-99	8	5.2	1.6486586
Dec-01	9	5.5	1.7047481
Jan-00	10	6.2	1.8245493
Oct-99	11	6.3	1.8405496
Dec-00	12	7	1.9459101
Aug-00	13	7.3	1.9878743
Feb-00	14	7.4	2.00148
Jul-00	15	7.5	2.014903
Jun-99	16	8.6	2.1517622
May-00	17	8.6	2.1517622
May-01	18	8.8	2.1747517
Apr-00	19	9.1	2.2082744
May-99	20	9.6	2.2617631
Feb-01	21	9.6	2.2617631
Jul-01	22	9.6	2.2617631
Nov-01	23	9.6	2.2617631
Sep-00	24	9.7	2.2721259
Jan-99	25	10	2.3025851
Feb-99	26	10	2.3025851
Apr-01	27	10.4	2.3418058
Jul-99	28	10.5	2.3513753
Jun-01	29	10.5	2.3513753
Oct-01	30	11	2.3978953
Aug-01	31	11.7	2.4595888
Sep-01	32	11.7	2.4595888
Mar-01	33	13	2.5649494
Mar-99	34	16	2.7725887
Mar-00	35	17.1	2.8390785
Jan-01	36	32.7	3.4873751

R-Squared = 0.64523775 0.83789827

R-Squared = 0.645

For Normal Distribution

Mean	Standard Deviation	95th Percentile	99th Percentile	Calculated LTA	Calculated AMEL	Calculated MDEL
9.1194	5.2314	17.73	21.29	8.07	12.3	24.1

Feasibility to Comply

Mean / LTA	95th / AMEL	99th / MDEL
9.1 > 8.1	17.7 > 12.3	21.3 < 24.1
No	No	Yes

*It is not feasible for the Discharger to comply with WQBELs (none of the Mean, 95th, and 99th percentile values are less than the LTA, AMEL, and MDEL, respectively.)

R-Squared = 0.837

For Lognormal Distribution

Mean	Standard Deviation	95th Percentile	99th Percentile	Calculated LTA	Calculated AMEL	Calculated MDEL
2.0811895	0.523462364	18.96	27.08	8.07	12.3	24.1

8.014 exp(mean of lognormal dist.)

Feasibility to Comply

Mean / LTA	95th / AMEL	99th / MDEL
8.0 < 8.1	18.96 > 12.3	27.1 > 24.1
Yes	No	No

*It is not feasible for the Discharger to comply with WQBELs (not all of the Mean, 95th, and 99th percentile values are less than the LTA, AMEL, and MDEL, respectively.)

Date	[Cu]
Jun-00	1.6
Oct-00	3.5
Sep-99	3.7
Nov-00	4.3
Aug-99	4.9
Apr-99	5
Dec-99	5.1
Nov-99	5.2
Dec-01	5.5
Jan-00	6.2
Oct-99	6.3
Dec-00	7
Aug-00	7.3
Feb-00	7.4
Jul-00	7.5
Jun-99	8.6
May-00	8.6
May-01	8.8
Apr-00	9.1
May-99	9.6
Feb-01	9.6
Jul-01	9.6
Nov-01	9.6
Sep-00	9.7
Jan-99	10
Feb-99	10
Apr-01	10.4
Jul-99	10.5
Jun-01	10.5
Oct-01	11
Aug-01	11.7
Sep-01	11.7
Mar-01	13
Mar-99	16
Mar-00	17.1
Jan-01	32.7

Attachment 7

Mercury Infeasibility Analysis

mercury Infeasibility Analysis

Date	Rank	[Hg]	LN [Hg]
Mar-99	1	0.005	-5.2983174
Dec-01	2	0.007	-4.9618451
Feb-99	3	0.01	-4.6051702
Jun-00	4	0.01	-4.6051702
Oct-99	5	0.011	-4.50986
Oct-01	6	0.011	-4.50986
Oct-00	7	0.012	-4.4228486
Jul-01	8	0.012	-4.4228486
Sep-01	9	0.014	-4.2686979
Nov-00	10	0.015	-4.1997051
Nov-01	11	0.015	-4.1997051
Jul-00	12	0.016	-4.1351666
May-01	13	0.016	-4.1351666
Jun-01	14	0.016	-4.1351666
Sep-99	15	0.017	-4.0745419
Aug-00	16	0.017	-4.0745419
Dec-99	17	0.018	-4.0173835
Feb-01	18	0.019	-3.9633163
Nov-99	19	0.02	-3.912023
Apr-01	20	0.02	-3.912023
Feb-00	21	0.021	-3.8632328
Apr-00	22	0.021	-3.8632328
Aug-01	23	0.021	-3.8632328
Jan-99	24	0.022	-3.8167128
Jun-99	25	0.022	-3.8167128
May-00	26	0.023	-3.7722611
Sep-00	27	0.023	-3.7722611
Dec-00	28	0.024	-3.7297014
Mar-01	29	0.025	-3.6888795
Aug-99	30	0.026	-3.6496587
Jan-01	31	0.026	-3.6496587
Jan-00	32	0.027	-3.6119184
Mar-00	33	0.028	-3.5755508
Jul-99	34	0.048	-3.0365543
Apr-99	35	0.1	-2.3025851
May-99	36	0.1	-2.3025851

R-Squared = 0.46087154 0.7982093

R-Squared = 0.461

For Normal Distribution

Mean	Standard Deviation	95th Percentile	99th Percentile	Calculated LTA	Calculated AMEL	Calculated MDEL
0.0233	0.0203	0.06	0.07	0.01	0.019	0.045

Feasibility to Comply

Mean / LTA	95th / AMEL	99th / MDEL
0.02 > 0.01	0.06 > 0.02	0.07 > 0.04
No	No	No

*It is not feasible for the Discharger to comply with WQBELs (none of the Mean, 95th, and 99th percentile values are less than the LTA, AMEL, and MDEL, respectively.)

R-Squared = 0.798

For Lognormal Distribution

Mean	Standard Deviation	95th Percentile	99th Percentile	Calculated LTA	Calculated AMEL	Calculated MDEL
-3.9632804	0.587270261	0.05	0.07	0.01	0.019	0.045

0.019

exp(mean of lognormal dist.)

Feasibility to Comply

Mean / LTA	95th / AMEL	99th / MDEL
0.02 > 0.01	0.05 > 0.02	0.07 > 0.04
No	No	No

*It is not feasible for the Discharger to comply with WQBELs (none of the Mean, 95th, and 99th percentile values are less than the LTA, AMEL, and MDEL, respectively.)

Date	[Hg]
Mar-99	0.005
Dec-01	0.007
Feb-99	0.01
Jun-00	0.01
Oct-99	0.011
Oct-01	0.011
Oct-00	0.012
Jul-01	0.012
Sep-01	0.014
Nov-00	0.015
Nov-01	0.015
Jul-00	0.016
May-01	0.016
Jun-01	0.016
Sep-99	0.017
Aug-00	0.017
Dec-99	0.018
Feb-01	0.019
Nov-99	0.02
Apr-01	0.02
Feb-00	0.021
Apr-00	0.021
Aug-01	0.021
Jan-99	0.022
Jun-99	0.022
May-00	0.023
Sep-00	0.023
Dec-00	0.024
Mar-01	0.025
Aug-99	0.026
Jan-01	0.026
Jan-00	0.027
Mar-00	0.028
Jul-99	0.048
Apr-99	0.1
May-99	0.1

Attachment 8

SALINITY VALUES IN PARTS PER THOUSAND RECEIVING WATER
SOUTH SAN FRANCISCO/SAN BRUNO - WATER QUALITY CONTROL PLANT -
DATA FROM RMP 1993-98

Station Code	Site	Date	Salinity (ppt)
BA40	Redwood Creek	3/2/1993	17.95
BA40	Redwood Creek	5/24/1993	24.17
BA40	Redwood Creek	9/13/1993	28.94
BA40	Redwood Creek	1/31/1994	27.6
BB15	San Bruno Shoal	1/30/1994	28.3
BA40	Redwood Creek	4/18/1994	26.4
BB15	San Bruno Shoal	4/18/1994	26.7
BA40	Redwood Creek	8/16/1994	29.9
BB15	San Bruno Shoal	8/15/1994	31
BA40	Redwood Creek	2/7/1995	16.2
BB15	San Bruno Shoal	2/6/1995	15.1
BA40	Redwood Creek	4/24/1995	15.8
BB15	San Bruno Shoal	4/25/1995	16.2
BA30	Dumbarton Bridge	8/15/1995	22.1
BA40	Redwood Creek	8/15/1995	23.8
BB15	San Bruno Shoal	2/5/1996	22.3
BA40	Redwood Creek	2/6/1996	20.6
BB15	San Bruno Shoal	4/30/1996	21.1
BA40	Redwood Creek	5/2/1996	19.8
BB15	San Bruno Shoal	7/29/1996	27.1
BA40	Redwood Creek	7/29/1996	26.8
BB15	San Bruno Shoal	1/21/1997	12.9
BA40	Redwood Creek	1/22/1997	12.1
BB15	San Bruno Shoal	4/16/1997	24.1
BA40	Redwood Creek	4/16/1997	22.2
BB15	San Bruno Shoal	7/28/1997	28.9
BA40	Redwood Creek	7/29/1997	29.1
BB15	San Bruno Shoal	1/27/1998	19
BA40	Redwood Creek	1/27/1998	19
BB15	San Bruno Shoal	4/20/1998	16.8
BA40	Redwood Creek	4/22/1998	17.3
BB15	San Bruno Shoal	7/20/1998	22.6
BA40	Redwood Creek	7/20/1998	20.7
Average			22.1987879
% > 5 ppt			100
% > 10 ppt			100

**Attachment 10: Near-Shore Overflows – South San Francisco/San Bruno WQCP
Fall 2000 – Spring 2002**

Spill Date	Volume Spilled to Colma Creek	Cause of Spill	Nature of Spilled Material	Sample Data	Remedial Measures taken
10/25/2000	30,000	Electrical disconnect; loss of pump control	Partially chlorinated wastewater	Chlorine residual violation of 1.3 mg/l	New portable generator purchased
12/13/2000	60,000	Loss of power, emergency generator failed due to ground faults engaging	Chlorinated effluent	Settleable matter violations; 2 daily max and Dec monthly average exceeded; Fecal col. Samples in Colma Creek inconclusive	New dechlor system and electric switching system to be implemented
1/10/2001	14,000	High flows exceeding pump capacity	Partially treated wastewater	Chlorine residual violation of 3.3 mg/l on effluent; receiving water samples taken: BOD, TSS, settl matter, fecal coliform values higher than ambient values in rec. water	
1/25/2001	926,000	High flows exceeding pumping capacity	Fully treated, disinfected, and dechlorinated wastewater	Receiving water samples taken: BOD, TSS, settl matter, fecal coliform values higher than ambient values in rec. water	
2/13/2001	29,000	High flows/ failure of lead/lag air compressor alternator	Fully treated, disinfected, and dechlorinated wastewater	Samples collected from windsurf area for TSS, settl. Solids, DO, BOD, fecal coliform, and NH3 results?	
2/22/2001	24,000	High Flows - 49 MGD	Fully treated, disinfected, and dechlorinated wastewater	Samples collected from SP-5, SP-6, SP-7, SP-8 results?	
12/28/2001	510,000	Heavy rains	Fully treated, disinfected, and dechlorinated wastewater	Creek samples taken	
12/29/2001	250,000	Heavy rains, effluent Pump 4 out of service	Fully treated, disinfected, and dechlorinated wastewater	Creek samples taken	
12/30/2001	332,000	Heavy rains, effluent Pump 4 out of service	Fully treated, disinfected, and dechlorinated wastewater	Creek samples taken	
1/2/2002	38,000	Heavy rains, effluent Pump 4 out of service	Fully treated, disinfected, and dechlorinated wastewater	Creek samples taken	
Total	2,213,000				

Attachment 11: Summary of Compliance with Cease & Desist Order

Water Quality Control Plant Improvement Program

	<u>Compliance Date</u>	<u>Actual Completion Date</u>
a. Complete design of the proposed WQCP improvement projects.	March 1, 1998	May 1998
b. Begin construction of the proposed WQCP improvement projects.	August 1, 1998	January 1999
c. Complete all the WQCP improvement projects and achieve full compliance with the effluent limitations of the NPDES permit.	March 1, 2001	August 2001

Infiltration/Inflow Improvement Program

a. Complete I/I studies and submit a Master Plan for improving the cities' sewer system.	September 1, 1998	October 1999
b. Complete I/I improvement projects recommended by I/I Study report and achieve full compliance with Discharge Prohibition 2 (all discharges to receive treatment) of the NPDES permit.	November 1, 2007	

Wet Weather Effluent Disposal Study

a. Begin wet weather effluent disposal study.	October 1, 1998	January 2002
b. Complete wet weather effluent disposal study and submit a work plan for the construction of the wet weather effluent disposal facilities.	February 1, 1999	January 2002

Attachment F

Pretreatment Program Provisions

- a. The Discharger shall implement all pretreatment requirements contained in 40 CFR 403, as amended. The Discharger shall be subject to enforcement actions, penalties, and fines as provided in the Clean Water Act (33 USC 1351 et seq.), as amended. The Discharger shall implement and enforce their respective Approved Pretreatment Programs or modified Pretreatment Programs as directed by the Board's Executive Officer or the EPA. The EPA and/or the State may initiate enforcement action against an industrial user for noncompliance with applicable standards and requirements as provided in the Clean Water Act.
- b. The Discharger shall enforce the requirements promulgated under Sections 307(b), 307(c), 307(d) and 402(b) of the Clean Water Act. The Discharger shall cause industrial users subject to Federal Categorical Standards to achieve compliance no later than the date specified in those requirements or, in the case of a new industrial user, upon commencement of the discharge.
- c. The Discharger shall perform the pretreatment functions as required in 40 CFR Part 403 and amendments or modifications thereto including, but not limited to:
 - i) Implement the necessary legal authorities to fully implement the pretreatment regulations as provided in 40 CFR 403.8(f)(1);
 - ii) Implement the programmatic functions as provided in 40 CFR 403.8(f)(2);
 - iii) Publish an annual list of industrial users in significant noncompliance as provided per 40 CFR 403.8(f)(2)(vii);
 - iv) Provide for the requisite funding and personnel to implement the pretreatment program as provided in 40 CFR 403.8(f)(3); and
 - v) Enforce the national pretreatment standards for prohibited discharges and categorical standards as provided in 40 CFR 403.5 and 403.6, respectively.
- d. The Discharger shall submit annually a report to the EPA Region 9, the State Board and the Regional Board describing the Discharger's respective pretreatment program activities over the previous twelve months. In the event that the Discharger is not in compliance with any conditions or requirements of this permit, the Discharger shall also include the reasons for noncompliance and a plan and schedule for achieving compliance. The report shall contain, but is not limited to, the information specified in **Appendix A** entitled, "Requirements for Pretreatment Annual Reports," which is made a part of this Order. The annual report is due on the last day of February each year.
- e. The Discharger shall submit semiannual pretreatment reports to the EPA Region 9, the State Board and the Board describing the status of their respective significant industrial users (SIUs). The report shall contain, but is not limited to, the information specified in **Appendix B** entitled, "Requirements for Semiannual Pretreatment Reports," which is made part of this Order. The semiannual reports are due July 31st (for the period January through

June) and January 31st (for the period July through December) of each year. The Executive Officer may exempt a Discharger from the semiannual reporting requirements on a case by case basis subject to State Board and EPA's comment and approval.

- f. The Discharger may combine the annual pretreatment report with the semiannual pretreatment report (for the July through December reporting period). The combined report shall contain all of the information requested in Appendices A and B and will be due on January 31st of each year.
- g. The Discharger shall conduct the monitoring of its treatment plant's influent, effluent, and sludge as described in **Appendix C** entitled, "Requirements for Influent, Effluent and Sludge Monitoring," which is made part of this Order. The results of the sampling and analysis, along with a discussion of any trends, shall be submitted in the semiannual reports. A tabulation of the data shall be included in the annual pretreatment report. The Executive Officer may require more or less frequent monitoring on a case by case basis.

APPENDIX A

REQUIREMENTS FOR PRETREATMENT ANNUAL REPORTS

The Pretreatment Annual Report is due each year on the last day of February. [If the annual report is combined with the semiannual report (for the July through December period) the submittal deadline is January 31st of each year.] The purpose of the Annual Report is 1) to describe the status of the Publicly Owned Treatment Works (POTW) pretreatment program and 2) to report on the effectiveness of the program, as determined by comparing the results of the preceding year's program implementation. The report shall contain at a minimum, but is not limited to, the following information:

1) Cover Sheet

The cover sheet must contain the name(s) and National Pollutant Discharge Elimination Discharge System (NPDES) permit number(s) of those POTWs that are part of the Pretreatment Program. Additionally, the cover sheet must include: the name, address and telephone number of a pretreatment contact person; the period covered in the report; a statement of truthfulness; and the dated signature of a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for overall operation of the POTW (40 CFR 403.12(j)).

2) Introduction

The Introduction shall include any pertinent background information related to the City, the POTW and/or the Industrial base of the area. Also, this section shall include an update on the status of any Pretreatment Compliance Inspection (PCI) tasks, Pretreatment Performance Evaluation tasks, Pretreatment Compliance Audit (PCA) tasks, Cleanup and Abatement Order (CAO) tasks, or other pretreatment-related enforcement actions required by the Regional Board or the EPA. A more specific discussion shall be included in the section entitled, "Program Changes."

3) Definitions

This section shall contain a list of key terms and their definitions that the POTW uses to describe or characterize elements of its pretreatment program.

4) Discussion of Upset, Interference and Pass Through

This section shall include a discussion of Upset, Interference or Pass Through incidents, if any, at the POTW(s) that the Discharger knows of or suspects were caused by industrial discharges. Each incident shall be described, at a minimum, consisting of the following information:

- a) a description of what occurred;
- b) a description of what was done to identify the source;
- c) the name and address of the IU responsible
- d) the reason(s) why the incident occurred;
- e) a description of the corrective actions taken; and
- f) an examination of the local and federal discharge limits and requirements for the purposes of determining whether any additional limits or changes to existing

requirements may be necessary to prevent other Upset, Interference or Pass Through incidents.

5) Influent, Effluent and Sludge Monitoring Results

This section shall provide a summary of the analytical results from the "Influent, Effluent and Sludge Monitoring" as specified in Appendix C. The results should be reported in a summary matrix that lists monthly influent and effluent metal results for the reporting year.

A graphical representation of the influent and effluent metal monitoring data for the past five years shall also be provided with a discussion of any trends.

6) Inspection and Sampling Program

This section shall contain at a minimum, but is not limited to, the following information:

- a) Inspections: the number of inspections performed for each type of IU; the criteria for determining the frequency of inspections; the inspection format procedures;
- b) Sampling Events: the number of sampling events performed for each type of IU; the criteria for determining the frequency of sampling; the chain of custody procedures.

7) Enforcement Procedures

This section shall provide information as to when the approved Enforcement Response Plan (ERP) had been formally adopted or last revised. In addition, the date the finalized ERP was submitted to the Regional Board shall also be given.

8) Federal Categories

This section shall contain a list of all of the federal categories that apply to the POTW. The specific category shall be listed including the subpart and 40 CFR section that applies. The maximum and average limits for the each category shall be provided. This list shall indicate the number of Categorical Industrial Users (CIUs) per category and the CIUs that are being regulated pursuant to the category. The information and data used to determine the limits for those CIUs for which a combined waste stream formula is applied shall also be provided.

9) Local Standards

This section shall include a table presenting the local limits.

10) Updated List of Regulated SIUs

This section shall contain a complete and updated list of the Discharger's Significant Industrial Users (SIUs), including their names, addresses, and a brief description of the SIU's type of business. The list shall include all deletions and additions keyed to the list as submitted in the previous annual report. All deletions shall be briefly explained.

11) Compliance Activities

a) **Inspection and Sampling Summary:** This section shall contain a summary of all the inspections and sampling activities conducted by the Discharger over the past year to gather information and data regarding the SIUs. The summary shall include:

- (1) the number of inspections and sampling events conducted for each SIU;
- (2) the quarters in which these activities were conducted; and
- (3) the compliance status of each SIU, delineated by quarter, and characterized using all applicable descriptions as given below:
 - (a) in consistent compliance;
 - (b) in inconsistent compliance;
 - (c) in significant noncompliance;
 - (d) on a compliance schedule to achieve compliance, (include the date final compliance is required);
 - (e) not in compliance and not on a compliance schedule;
 - (f) compliance status unknown, and why not.

b) **Enforcement Summary:** This section shall contain a summary of the compliance and enforcement activities during the past year. The summary shall include the names of all the SIUs affected by the following actions:

- (1) Warning letters or notices of violations regarding SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.
- (2) Administrative Orders regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.
- (3) Civil actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.
- (4) Criminal actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

- (5) Assessment of monetary penalties. Identify the amount of penalty in each case and reason for assessing the penalty.
- (6) Order to restrict/suspend discharge to the POTW.
- (7) Order to disconnect the discharge from entering the POTW.

12) Baseline Monitoring Report Update

This section shall provide a list of CIUs that have been added to the pretreatment program since the last annual report. This list of new CIUs shall summarize the status of the respective Baseline Monitoring Reports (BMR). The BMR must contain all of the information specified in 40 CFR 403.12(b). For each of the new CIUs, the summary shall indicate when the BMR was due; when the CIU was notified by the POTW of this requirement; when the CIU submitted the report; and/or when the report is due.

13) Pretreatment Program Changes

This section shall contain a description of any significant changes in the Pretreatment Program during the past year including, but not limited to: legal authority, local limits, monitoring/inspection program and frequency, enforcement protocol, program's administrative structure, staffing level, resource requirements and funding mechanism. If the manager of the pretreatment program changes, a revised organizational chart shall be included. If any element(s) of the program is in the process of being modified, this intention shall also be indicated.

14) Pretreatment Program Budget

This section shall present the budget spent on the Pretreatment Program. The budget, either by the calendar or fiscal year, shall show the amounts spent on personnel, equipment, chemical analyses and any other appropriate categories. A brief discussion of the source(s) of funding shall be provided.

15) Public Participation Summary

This section shall include a copy of the public notice as required in 40 CFR 403.8(f)(2)(vii). If a notice was not published, the reason shall be stated.

16) Sludge Storage and Disposal Practice

This section shall have a description of how the treated sludge is stored and ultimately disposed. The sludge storage area, if one is used, shall be described in detail. Its location, a description of the containment features and the sludge handling procedures shall be included.

17) PCS Data Entry Form

The annual report shall include the PCS Data Entry Form. This form shall summarize the enforcement actions taken against SIUs in the past year. This form shall include the following information: the POTW name, NPDES Permit number, period covered by the report, the number of SIUs in significant noncompliance (SNC) that are on a pretreatment compliance

schedule, the number of notices of violation and administrative orders issued against SIUs, the number of civil and criminal judicial actions against SIUs, the number of SIUs that have been published as a result of being in SNC, and the number of SIUs from which penalties have been collected.

18) **Other Subjects**

Other information related to the Pretreatment Program that does not fit into one of the above categories should be included in this section.

Signed copies of the reports shall be submitted to the Regional Administrator at USEPA, the State Water Resources Control Board and the Regional Board at the following addresses:

Regional Administrator
United States Environmental Protection Agency
Region 9, Mail Code: WTR-7
Clean Water Act Compliance Office
Water Division
75 Hawthorne Street
San Francisco, CA 94105

Pretreatment Program Manager
Regulatory Unit
State Water Resources Control Board
Division of Water Quality
1001 I Street
Sacramento, CA 95814

Pretreatment Coordinator
NPDES Permits Division
SF Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

APPENDIX B:

REQUIREMENTS FOR SEMIANNUAL PRETREATMENT REPORTS

The semiannual pretreatment reports are due on July 31st (for pretreatment program activities conducted from January through June) and January 31st (for pretreatment activities conducted from July through December) of each year, unless an exception has been granted by the Board's Executive Officer. The semiannual reports shall contain, at a minimum, but is not limited to, the following information:

1) Influent, Effluent and Sludge Monitoring

The influent, effluent and sludge monitoring results shall be included in the report. The analytical laboratory report shall also be included, with the QA/QC data validation provided upon request. A description of the sampling procedures and a discussion of the results shall be given. (Please see Appendix C for specific detailed requirements.) The contributing source(s) of the parameters that exceed NPDES limits shall be investigated and discussed. In addition, a brief discussion of the contributing source(s) of all organic compounds identified shall be provided.

The Discharger has the option to submit all monitoring results via an electronic reporting format approved by the Executive Officer. The procedures for submitting the data will be similar to the electronic submittal of the NPDES self-monitoring reports as outlined in the December 17, 1999 Regional Board letter, Official Implementation of Electronic Reporting System (ERS). The Discharger shall contact the Regional Board's ERS Project Manager for specific details in submitting the monitoring data.

If the monitoring results are submitted electronically, the analytical laboratory reports (along with the QA/QC data validation) should be kept at the discharger's facility.

2) Industrial User Compliance Status

This section shall contain a list of all Significant Industrial Users (SIUs) that were not in consistent compliance with all pretreatment standards/limits or requirements for the reporting period. The compliance status for the previous reporting period shall also be included. Once the SIU has determined to be out of compliance, the SIU shall be included in the report until consistent compliance has been achieved. A brief description detailing the actions that the SIU undertook to come back into compliance shall be provided.

For each SIU on the list, the following information shall be provided:

- a. Indicate if the SIU is subject to Federal categorical standards; if so, specify the category including the subpart that applies.
- b. For SIUs subject to Federal Categorical Standards, indicate if the violation is of a categorical or local standard.
- c. Indicate the compliance status of the SIU for the two quarters of the reporting period.

- d. For violations/noncompliance occurring in the reporting period, provide (1) the date(s) of violation(s); (2) the parameters and corresponding concentrations exceeding the limits and the discharge limits for these parameters and (3) a brief summary of the noncompliant event(s) and the steps that are being taken to achieve compliance.

3) **POTW's Compliance with Pretreatment Program Requirements**

This section shall contain a discussion of the Discharger's compliance status with the Pretreatment Program Requirements as indicated in the latest Pretreatment Compliance Audit (PCA) Report, Pretreatment Compliance Inspection (PCI) Report or Pretreatment Performance Evaluation (PPE) Report. It shall contain a summary of the following information:

- a. Date of latest PCA, PCI or PPE and report.
- b. Date of the Discharger's response.
- c. List of unresolved issues.
- d. Plan and schedule for resolving the remaining issues.

The reports shall be signed by a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for the overall operation of the Publicly Owned Treatment Works (POTW) (40 CFR 403.12(j)). Signed copies of the reports shall be submitted to the Regional Administrator at USEPA, the State Water Resources Control Board and the Regional Board at the following addresses:

Regional Administrator
United States Environmental Protection Agency
Region 9, Mail Code: WTR-7
Clean Water Act Compliance Office
Water Division
75 Hawthorne Street
San Francisco, CA 94105

Pretreatment Program Manager
Regulatory Unit
State Water Resources Control Board
Division of Water Quality
1001 I Street
Sacramento, CA 95814

Pretreatment Coordinator
NPDES Permits Division
SF Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

APPENDIX C

REQUIREMENTS FOR INFLUENT, EFFLUENT AND SLUDGE MONITORING

The Discharger shall conduct sampling of their respective treatment plant's influent, effluent and sludge at the frequency as shown in Table 3 of the SMP.

The monitoring and reporting requirements of the POTW's Pretreatment Program are in addition to those specified in the individual POTW's NPDES permit. Any subsequent modifications of the NPDES requirements shall be adhered to and shall not affect the requirements described in this Appendix unless written notice from the Regional Board is received. When sampling periods coincide, one set of test results, reported separately, may be used for those parameters that are required to be monitored in both the Discharger's NPDES permit and Pretreatment Program. Monitoring reports required by this Order shall be sent to the Pretreatment Coordinator.

1. Influent and Effluent Monitoring

The Discharger shall monitor for the parameters using the required test methods listed in Table 3 of the SMP. Any test method substitutions must have received prior written Regional Board approval. In addition, unless instructed otherwise in writing, the Discharger shall continue to monitor for those parameters at the frequency stated in Table 1. Influent and Effluent sampling locations shall be the same as those sites specified in the POTW's Self-Monitoring Program as set forth in its NPDES permit.

The influent and effluent sampled should be taken during the same 24-hour period. All samples must be representative of daily operations. A grab samples shall be used for volatile organic compounds, cyanide and phenol. In addition, any samples for oil and grease, polychlorinated biphenyls, dioxins/furans, and polynuclear aromatic hydrocarbons shall be grab samples. For all other pollutants, 24-hour composite samples must be obtained through flow-proportioned composite sampling. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto. For effluent monitoring, the reporting limits for the individual parameters shall be at or below the minimum levels (MLs) as stated in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (2000) [also known as the State Implementation Policy (SIP)]; any revisions to the MLs shall be adhered to. If a parameter does not have a stated minimum level, then the Discharger shall conduct the analysis using the lowest commercially available and reasonably achievable detection levels.

The following standardized report format should be used for submittal of the influent and effluent monitoring report. A similar structured format may be used but will be subject to Regional Board approval. The monitoring reports shall be submitted with the Semiannual Reports.

- A. **Sampling Procedures** – This section shall include a brief discussion of the sample locations, collection times, how the sample was collected (i.e., direct collection using vials or bottles, or other types of collection using devices such as automatic samplers, buckets, or beakers), types of containers used, storage procedures and holding times. Include description of prechlorination and chlorination/dechlorination practices during the sampling periods.

- B. Method of Sampling Dechlorination – A brief description of the sample dechlorination method prior to analysis shall be provided.
- C. Sample Compositing – The manner in which samples are composited shall be described. If the compositing procedure is different from the test method specifications, a reason for the variation shall be provided.
- D. Data Validation – All quality assurance/quality control (QA/QC) methods to be used shall be discussed and summarized. These methods include, but are not limited to, spike samples, split samples, blanks and standards. Ways in which the QA/QC data will be used to qualify the analytical test results shall be identified. A certification statement shall be submitted with this discussion stating that the laboratory QA/QC validation data has been reviewed and has met the laboratory acceptance criteria. The QA/QC validation data shall be submitted to the Regional Board upon request.
- E. A tabulation of the test results shall be provided.
- F. Discussion of Results – The report shall include a complete discussion of the test results. If any pollutants are detected in sufficient concentration to upset, interfere or pass through plant operations, the type of pollutant(s) and potential source(s) shall be noted, along with a plan of action to control, eliminate, and/or monitor the pollutant(s). Any apparent generation and/or destruction of pollutants attributable to chlorination/dechlorination sampling and analysis practices shall be noted.

2. **Sludge Monitoring**

Sludge should be sampled in the same 24-hour period during which the influent and effluent are sampled except as noted in (C) below. The same parameters required for influent and effluent analysis shall be included in the sludge analysis. The sludge analyzed shall be a composite sample of the sludge for final disposal consisting of:

- A. Sludge lagoons – 20 grab samples collected at representative equidistant intervals (grid pattern) and composited as a single grab, or
- B. Dried stockpile – 20 grab samples collected at various representative locations and depths and composited as a single grab, or
- C. Dewatered sludge- daily composite of 4 representative grab samples each day for 5 days taken at equal intervals during the daily operating shift taken from a) the dewatering units or b) from each truckload, and shall be combined into a single 5-day composite.

The U.S. EPA manual, POTW Sludge Sampling and Analysis Guidance Document, August 1989, containing detailed sampling protocols specific to sludge is recommended as a guidance for sampling procedures. The U.S. EPA manual Analytical Methods of the National Sewage Sludge Survey, September 1990, containing detailed analytical protocols specific to sludge, is recommended as a guidance for analytical methods.

In determining if the sludge is a hazardous waste, the Dischargers shall adhere to Article 2, "Criteria for Identifying the Characteristics of Hazardous Waste," and Article 3, "Characteristics of Hazardous Waste," of Title 22, California Code of Regulations, Sections 66261.10 to 66261.24 and all amendments thereto.

Sludge monitoring reports shall be submitted with the appropriate Semiannual Report. The following standardized report format should be used for submittal of the report. A similarly structured form may be used but will be subject to Regional Board approval.

- A. Sampling procedures – Include sample locations, collection procedures, types of containers used, storage/refrigeration methods, compositing techniques and holding times. Enclose a map of sample locations if sludge lagoons or stockpiled sludge is sampled.
- B. Data Validation – All quality assurance/quality control (QA/QC) methods to be used shall be discussed and summarized. These methods include, but are not limited to, spike samples, split samples, blanks and standards. Ways in which the QA/QC data will be used to qualify the analytical test results shall be identified. A certification statement shall be submitted with this discussion stating that the laboratory QA/QC validation data has been reviewed and has met the laboratory acceptance criteria. The QA/QC validation data shall be submitted to the Regional Board upon request.
- C. Test Results – Tabulate the test results and include the percent solids.
- D. Discussion of Results – The report shall include a complete discussion of test results. If the detected pollutant(s) is reasonably deemed to have an adverse effect on sludge disposal, a plan of action to control, eliminate, and/or monitor the pollutant(s) and the known or potential source(s) shall be included. Any apparent generation and/or destruction of pollutants attributable to chlorination/dechlorination sampling and analysis practices shall be noted.

The Discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants that the permittee believes may be causing or contributing to Interference, Pass Through or adversely impacting sludge quality.